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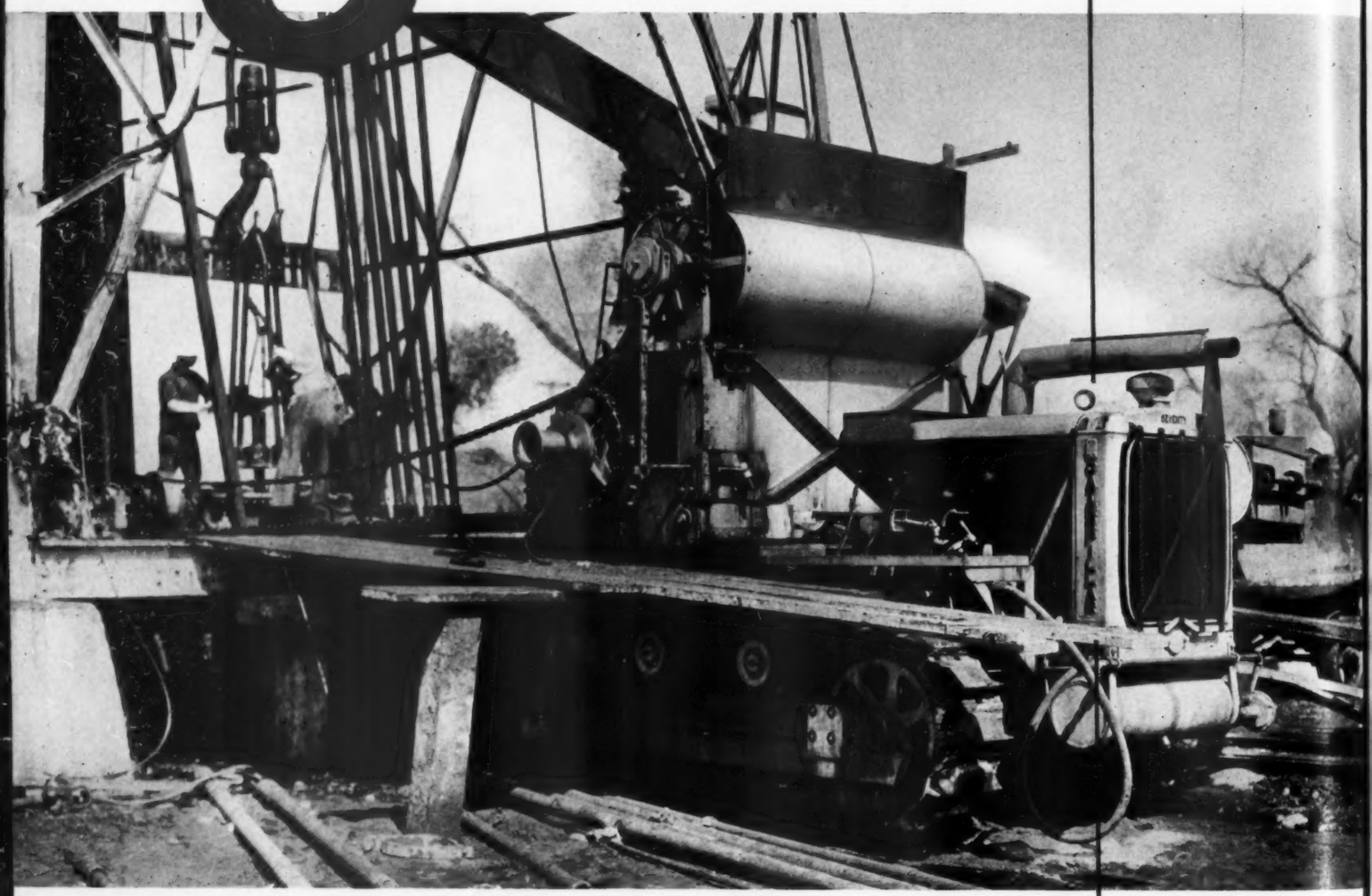

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Situation Looks Better as Demand Rises

THE remarkable record of the oil industry so far this year in point of the demand for its principal refinery products is forcing statisticians to revise their earlier estimates of probable requirements for the entire year. It also is causing individual companies to take a more optimistic attitude regarding probable market trends with less emphasis placed on the heavy current inventory in the case of motor fuels. Many of these concerns have more gasoline on hand than they had last year, but with their demand running 3 to 5 per cent more than they expected they feel that they will need these additional stocks over the next 90 days.

Gasoline demand for the first half of the year probably will show a gain of at least 10 per cent over the first half of 1935, the previous record for that period. This estimate is based on Bureau of Mines reports covering the first four months and private estimates covering May and so far in June. There are individual cases in which the gain in demand is substantially in excess of 10 per cent. The gains in fuel oil and gas oil demand so far this year is even more impressive.

Marketwise the significance of this development is already apparent. While motor fuel inventories are more than 10,000,000 barrels greater than in the corresponding period of last year, there is no important dumping of excess stocks, which are largely in the hands of major companies. The current gasoline shipments of most of these companies are running far ahead of last year's and they do not feel that their supplies on hand are more than working requirements demand for this season of the year. One major eastern marketing company has 30 per cent more gasoline on hand than it had a year ago.

Production 2,960,757
Decrease 2,882

With better than a 10 per cent increase in demand, this company, which supplements its own refinery output with purchases from other companies, expects to buy more gasoline from other refiners over the last half of this year than it did in the same period of 1935. In brief, as one operator explains, "Stocks which would be excessive with a 5 or 6 per cent increase in demand may be in line with working requirements in the face of 10 per cent increase."

This is not interpreted to mean that the situation attending present crude oil production and refinery output is entirely sound and that there need be no fear for the future. It does indicate that a much larger gain in demand than had been expected has once more saved the industry from the results of its own greatly expanded operations and simplifies the problem of a proper balance for the future. As now interpreted by many observers markets are reasonably safe for the summer months of high gasoline demand.

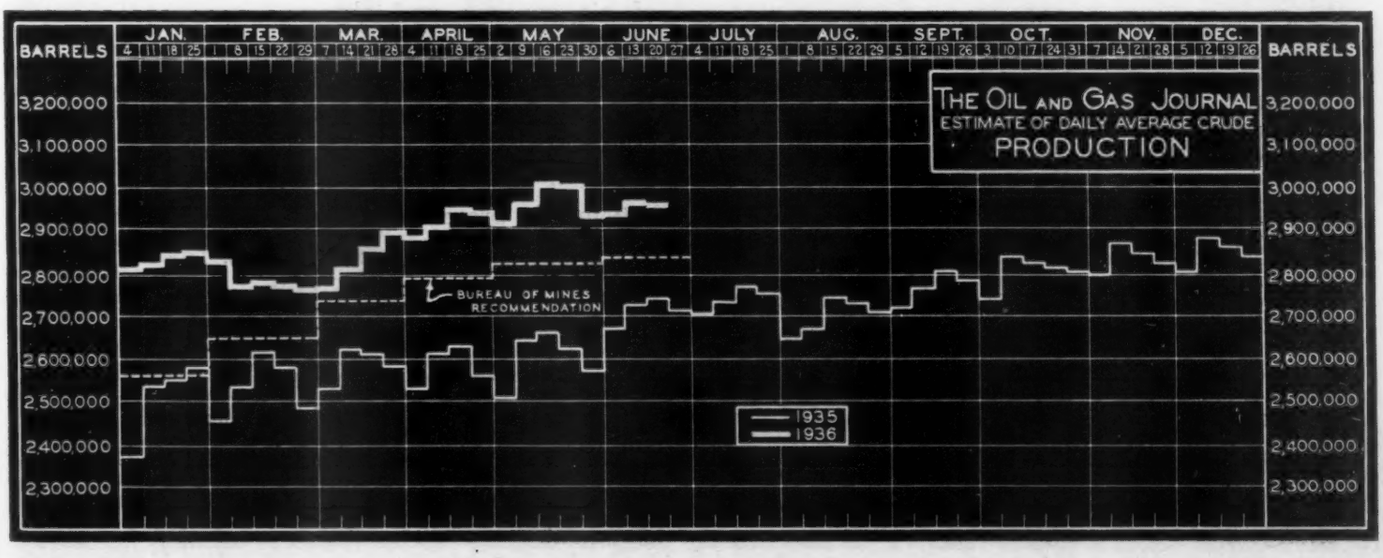
Daily Average Production for Week

	June 20 1936	B. of M. est. of demand	June 13 1936
Oklahoma City	125,725	.....	151,275
Seminole-St. Louis	100,100	.....	102,250
Remainder of State	320,525	.....	313,725
Total Oklahoma	546,350	552,500	567,250
East Texas	444,150	.....	439,754
West Texas	179,289	.....	179,091
Texas Panhandle	64,893	.....	56,446
North Central Texas	84,492	.....	84,009
East Central Texas	55,000	.....	53,010
Gulf Coast—Texas	254,583	.....	249,946
Southwest Texas	86,087	.....	85,444
Total State of Texas	1,168,494	1,125,700	1,147,700
North Louisiana	75,425	.....	75,145
Gulf Coast—Louisiana	145,637	.....	144,303
Total Louisiana	221,062	175,700	219,448
Santa Fe Springs	43,650	.....	43,900
Long Beach	68,000	.....	68,500
Kettleman Hills	77,500	.....	77,100
Remainder of State	393,000	.....	393,500
Total California	582,150	535,500	583,000
Kansas	149,175	153,100	152,325
Arkansas	29,565	31,800	29,745
Eastern fields	109,000	103,200	108,500
Michigan	30,381	37,000	32,511
Southeast New Mexico	67,390	67,400	66,590
Rocky Mountain area	57,190	56,400	56,570
Total United States	2,960,757	2,838,300	2,963,639

Crude Oil Stocks in U. S.

(BUREAU OF MINES ESTIMATE)

Week ending June 6, 1936	314,353,000
Week ending May 30, 1936	314,020,000
Week ending June 8, 1935	337,062,000



SPARKS FROM THE NEWS

Target

Oklahoma operators agree to continue curtailment of production below Bureau of Mines recommendations for July. Best way to avoid overshooting the mark.

Reprieve

The gasoline consumer rescued the industry in the nick of time. But it will have to keep production in line if it hopes to stay out of danger.

Advice

Warning that overproduction of crude will force lower prices is not cancelled by extraordinary increase in gasoline demand. It can still be true, if unheeded.

Curb

Rodessa operators are reported slowing down until they see what Louisiana legislature does. Perhaps legislators had better stay in session.

Patience

Talco producers are holding their oil until they can get what it is worth. They don't believe in selling dollars for 50 cents.

Echo

Canadian meeting was told American oil reserves could last only 15 years at present rate of consumption. Didn't we hear same thing 15 years ago?

Revolt

City taxes on gasoline are being repealed in some Missouri towns and rejected in others. Shows legislators what the people back home think?

Progress

Texas joins the procession in cutting production. And producers approve it as necessary. Times have changed.

More Trucks

Manufacture of trucks increased 14 per cent for first four months of 1936 over similar 1935 period, reports Automotive Industries. Important factor in gasoline consumption increase but——

Less Profit

What good is the additional commercial gallonage if companies persist in offering disproportionate commercial discounts? Greed for volume still destroys excellent profit possibilities.

No Politics

England's road building program is being vigorously pursued. Gasoline tax of approximately 14 cents per American gallon is being properly used.

Oil Showing

Oil company exhibits add much to Texas Centennial. As matter of fact, oil industry has added much to Texas.

Revival

Southern Illinois is enjoying spirited leasing activity. Major companies are involved in acquisition of acreage running northeast from Mississippi River near state's southern boundary.

On the Spot

Oklahoma's conservation officer can look out of his window and observe operations. They brought the oil field to him.

Productivity Index

Engineers state a proration plan based on static bottom-hole pressure alone will indicate and correct drainage across property lines. This simplifies matters.

Test

Louisiana conservation bill is far from being what is needed but it is somewhat nearer than existing laws. A lot depends on the manner of enforcement.

Compact States Save Situation By Reduction in Production

By L. G. E. BIGNELL

Art L. Walker, secretary, Interstate Oil Compact Commission

The Interstate Oil Compact Commission has passed a crucial test in bringing about the scaling down of production in Oklahoma, Kansas and New Mexico and is now engaged in an effort to get all other oil-producing states to join in this movement to reduce daily production to daily demand estimates furnished by the U. S. Bureau of Mines. It has been found that the bureau's estimates were right but were not closely followed and it is feared if this higher rate of production is continued through the summer a cut in the price of crude oil will ultimately result.

The next regular meeting of the commission has been set for 10 a.m. Friday, July 31, at the Baker Hotel, Dallas, Tex., and invitations have been sent to the governors of all non-compacting states asking that representatives for those states be present at this important meeting. Several committes are to make reports at that time and it is believed these reports will reflect the good accomplished by the compact thus far and the need of further cooperation by all states to insure stabilization of the industry.

Oklahoma, Kansas, Texas, New Mexico, Colorado and Illinois now form the Oil State Compact and there are 15 other oil-producing states not now within the compact. It is hoped these states, as well as those now within the compact, will, through the police power vested in their various state commissions, bring about reduction in the daily rate of production to conform with Bureau of Mines estimates.

When it was found the actual production was exceeding the recommended production the governing bodies in Oklahoma, Kansas, Texas and New Mexico agreed to recommend a 5 per cent reduction for each state below the bureau's figures, hoping in this way to gradually reduce overage and balance stocks. For instance, during the month of June the recommendations were as follows:

	U. S. Bureau of Mines recommendations	Less 5 per cent	Amount of cut
Oklahoma	552,500	524,875	27,625
Texas	1,125,700	1,069,415	56,285
Kansas	153,100	145,445	7,655
New Mexico	68,300	64,885	3,415
Totals	1,899,600	1,804,620	94,980

Total recommended reduction for June, 2,849,400 bbls.

The accompanying table shows a comparison of production and Bureau of Mines estimates for four states during the first four months of this year.

A further study of this situation shows that seven of the principal oil-producing states overproduced a total of about 24,287,780 bbls. of oil during the first quarter, and if the five states listed in the table as well as California and Louisiana all cut back their daily allowables 5 per cent below the Bureau of Mines recommendations this overage would be adjusted during the summer months with prospects of an increase in crude oil prices early in the fall regardless of the fact that this is usually looked upon as the season for reduced demand for crude and finished products.

As the six states now in the compact were allotted in June 1,916,600 bbls. of daily production out of 2,838,300 bbls. recommended by the Bureau of Mines for the total daily production, or 67.6 per cent, it is felt the other 15 oil-producing states with an aggregate daily allowable of 921,700 bbls., or 32.6 per cent of the total, should also join the Interstate Compact.

Acting under resolutions passed at the March meeting of the Compact Commission held in Oklahoma City, Art L. Walker, secretary for this body, has sent out invitations to the non-compacting

Ernest O. Thompson, chairman, Texas Railroad Commission

Price Reduction Averted

The Interstate Compact has been passing through a crucial test during the mounting tide of crude production, which for a time seemed to threaten the price structure.

The cooperation among the states within the compact in reducing their production has saved the situation.

The Texas reduction below the Bureau of Mines recommendation for July, following reductions by Kansas, New Mexico and Oklahoma has proved the willingness of the states within the compact to stand by it.

This demonstration of the effectiveness of the compact is expected to have much weight in attracting the other oil-producing states into the compact.

The legislatures in these states will meet next winter and it will be the object of the Interstate Compact Commission meeting at Dallas, Tex., July 31, to encourage the producers in those states to secure the legislation needed to enable them to join the compact.

COMPARISON OF PRODUCTION AND BUREAU OF MINES ESTIMATES FOR OKLAHOMA, CALIFORNIA, KANSAS, LOUISIANA AND TEXAS

Figures for January, February, March and April, 1936, from Bureau of Mines.

	January daily estimate	January daily ave. production	Over	February daily estimate	February daily ave. production	Over	March daily estimate	March daily ave. production	Over	April daily estimate	April daily ave. production	Over
Oklahoma	481,000	513,000	32,000	483,700	515,500	31,800	506,300	548,100	41,800	525,000	574,200	49,200
California	517,800	680,100	162,300	529,600	587,400	57,800	538,800	565,800	27,000	552,600	572,700	20,100
Kansas	134,000	143,800	9,800	137,400	138,600	1,200	142,000	155,300	13,300	146,000	163,600	17,600
Louisiana	132,600	179,700	47,100	141,100	189,800	48,700	151,400	204,600	53,200	160,900	215,800	54,900
Texas	1,017,200	1,066,400	49,200	1,068,200	1,124,100	55,900	1,104,000	1,143,700	39,700	1,122,800	1,187,600	64,800
Total	2,282,600	2,583,000	300,400	2,360,000	2,555,400	195,400	2,442,500	2,617,500	175,000	2,507,300	2,713,900	206,600

state governors and is encouraged by replies so far received, but the oil men in each of these states, as well as all others interested in this industry, can do much to further this movement by expressing their wishes to their state executive.

There are three committees now functioning for the Oil State Compact Commission, one headed by Homer Hoch of Kansas, known as the "Conservation Committee," and the other standing committees headed by Col. Ernest O. Thompson of Texas on "Coordination." Both committees made progress reports at the March meeting of the commission. The subcommittee on Conservation is made up of Marvin Lee, Kansas, chairman; Dr. E. H. Wells of New Mexico and C. C. Brown of Oklahoma.

That committee has studied and codified the oil and gas laws of Arkansas, Colorado, California, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Montana, New Mexico, New York, Oklahoma, Pennsylvania, Texas, Utah, West Virginia and Wyoming. The report is quite voluminous and is not as yet complete, but it does show the wide discrepancies between state laws upon very vital phases of the oil industry. Some of the laws are old and do not conform with modern practices. The Oil and Gas Conservation Law passed by the New Mexico legislature on August 12, 1935, best covers the needs of the industry, but even that law can be improved upon in some places.

The committee on Coordination also made a report through Chairman Col. Ernest O. Thompson in which it was recommended that it "ascertain as accurately as possible the aggregate potential production of either oil or gas or both of each member state and the percentage thereof actually being produced." Work is under way on this project and further report is to be made at the July meeting.

Dr. E. H. Wells, New Mexico, also made a report for the committee on "Consumption," discussing the statistics and estimates of consumers demand issued by the U. S. Bureau of Mines. Committee members had conferences in Washington, D. C., with director and members of the Bureau of Mines and studied the methods used in making up these statistics. The committee expressed itself as satisfied that this work should be done by "an unbiased fact-finding agency like the Bureau of Mines, and that it be adequately financed and in a manner that will keep it free from influences that would detract from its accuracy and impartiality."

This committee further recommended a study of all crude oil stocks as desirable and timely, and this survey by the Bureau of Mines has since been authorized and will start about June 22. Not only will the quantity of oil in storage be determined but the characteristics so that it may be classified as to finished products it will make. This will give a true index of stocks above ground and this work is being pushed as rapidly as possible by the engineers of the Bureau of Mines in all parts of this country.

Wallace R. Finney Named Head of Oklahoma and Ajax Lines

NEW YORK, June 22.—Wallace R. Finney, chief engineer in the producing department, Standard Oil Co. of New Jersey, has been elected president of the Oklahoma Pipe Line Co. and Ajax Pipe Line Co., succeeding E. H. Leroux and H. S. Austin, respectively. Mr. Leroux, who had contemplated retiring under the company's annuity plan, is remaining, at the request of the management, in an advisory capacity until Mr. Finney has had an opportunity to acquaint himself with operations. Mr. Austin is relinquishing active direction of the Ajax Pipe Line Co.'s affairs to devote himself to general supervision of domestic pipe line operations from New York.

W. R. FINNEY

"Cap" Finney, as he is everywhere known, has had a varied and colorful career. There is no electrical or engineering problem connected with pipe lines or oil production with which he has not wrestled right on the ground. He was born June 15, 1889, and raised on a ranch in California. After graduating from Modesto high school in June, 1908, he went to the University of Nevada for one year; later to Stanford, from which he was graduated in December, 1912, receiving an A.B. in mechanical engineering. During vacations he worked in the harvest fields, learned to do blacksmithing and carpenter work and to operate gas engines and farm machinery. He spent a short time in civil engineering work, mostly irrigation projects, and obtained his first oil field experience in January, 1914, as a member of a pipe line gang for Standard Oil Co. of California, and in July, 1914, got a job as roustabout for Montebello Oil Co., Fillmore, Calif. During three years with this company he gained practical experience running shift in the gas plant and booster stations and as a pumper, pipe fitter and construction man. He was made foreman of the gasoline plant and served as general lease foreman. In May, 1917, he left for Oklahoma, where he spent over a year designing and constructing casinghead gasoline plants and installing gas-collecting systems with the Empire Companies.

On July 1, 1918, he joined Midwest Refining Co. at Casper, Wyo., a connection that lasted 11 years, the first few years spent on design and construction of casinghead gasoline plants in the Salt Creek and Elk Basin fields, and laying pipe lines in Wyoming. In April, 1920, he was made superintendent of the gas department. In November, 1923, he advanced to general superintendent of the gas and electric department, and assisted in the design, construction and operation of the Salt Creek power plant and the electrification of the field. His last position with Midwest Refining Co. was as chief engineer of the field division.

On September 1, 1929, Mr. Finney was transferred to New York by the parent company, Standard Oil Co. (Indiana), to the production department of Pan American Petroleum & Transport Co. His main assignment was the electrification of the Lago properties in Venezuela, and the construction of the Punta Gorda power plant and electric transmission systems. He also worked on gas plant, compressor station, pipe line and pump station problems, both in Venezuela and Mexico. When Indiana sold its foreign properties to New Jersey in May, 1932, Mr. Finney became a member of the production department of the latter company in New York, and continued to handle gas and electric plant, pipe line and pump station work in Venezuela, Argentina and Mexico, including gas drive and repressuring stations.

E. H. Leroux, retiring president of the Oklahoma Pipe Line Co., was born in the Pennsylvania oil country, but did not engage in oil work until he was 31. He has remained continuously in the industry for more than 31 years.

Mr. Leroux was born in Rouseville, near Titusville, Pa., October 24, 1874. He spent his boyhood there, attending the local schools. His first regular work was in a clerical position with the Western New York & Pennsylvania Railway, now the Pennsylvania Railroad. He was with the railroad for 10 years, first in the master mechanic's office at Titusville, then in the superintendent's office there.

E. H. LEROUX

At the end of 10 years he had tired of railroad work, and went into business for himself, operating a sporting goods, newspaper and magazine business in Oil City. Three years later he disposed of that business and set out to find other work. About that time the big oil play was just getting under way in the Southwest, and the shallow fields of southeastern Kansas were very active. He decided to go to the Southwest and join in the oil play.

He moved to Kansas and on February 1, 1905, went to work for the Prairie Oil & Gas Co., pipe line department, at Neodesha, Kans., as telegraph operator at Argo station. He was transferred to the accounting department of the company in June, 1906.

When the Oklahoma Pipe Line Co. was organized, he was transferred to the new company, a Standard Oil Co. (New Jersey) subsidiary. He was placed in charge of accounts and opened the office in Muskogee, Okla., December 1, 1909. At that time, J. E. O'Neil was president and D. C. Stewart, general superintendent.

Mr. Leroux's advance was rapid. On March 23, 1914, he became secretary and treasurer, and on October 21, 1921, vice president and treasurer. On February 22, 1926, he became president. He moved to Tulsa when the company's headquarters were transferred from Muskogee in July, 1933.

Amended Louisiana Conservation Bill Fails to Meet Oil Industry's Needs

By MITCHELL TUCKER

SHREVEPORT, La., June 22.—The proposed Louisiana Conservation Law, House Bill No. 465, emerged from the house committee hearing practically unchanged. The bill in its amended form will be voted upon by the house early this week; practically unanimous approval is expected.

The House Committee hearing on June 16th was uneventful, except that not one of the suggested amendments recommended by representatives of the oil industry was accepted by the committee. In addition, the request from the industry's representatives for a second hearing before the house committee was denied. The only changes were those recommended by the administration leader, Representative Morvant, a co-author of the bill. These were more or less routine.

It is the general opinion of those who have followed the formulation and progress of this measure that, although it is certainly not all that could be hoped for in a thoroughly equitable and practical bill, it is a step forward from the present incoherent Louisiana conservation laws.

Provisions as Amended

Minerals produced in excess of the reasonable market demand, ascertained by the commissioner of conservation is prohibited.

Section 2. (a) That the words "reasonable market demand" shall mean the quantity of crude oil, and natural gas, produced in this state that might reasonably be expected to be purchased by pipe lines, refineries and crude oil or other purchasing agencies during any month following the ascertainment and estimate thereof by the commissioner of conservation and the issuance of his regulation fixing the same. The words "reasonable market demand" shall also include the demand for such crude petroleum oil, natural gas, for reasonable current requirements for current consumption and use within or outside the state, together with the demand for such amounts as are reasonably necessary for building up or maintaining reasonable storage reserves of crude petroleum oil, and natural gas, or both such crude petroleum oil and other products as may be determined by the commissioner of conservation.

(b) The term "common source of supply" shall comprise and include that area which is underlaid, or which from geological or other scientific data, or from drilling operations, or other evidence appears to be underlaid by a common accumulation of oil or gas, provided that if any such area is underlaid, or appears from geological or other scientific data, or from drilling operations or other evidence to be underlaid by more than one common accumulation of oil or gas, completely separated from each other area, then such area shall, as to each said common accumulation of oil or gas, be deemed a separate common source of supply.

(c) "Underground Waste" as these words are generally understood in the oil and mineral business, and in any event to embrace the inefficient, excessive, or improper, use of dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil, natural gas, ultimately recoverable from any pool.

(d) "Surface waste" as these words are generally understood in the oil and mineral business, and in any event to embrace the unnecessary or excessive surface loss or destruction without beneficial use, however caused, of natural gas, crude petroleum oil, or any product thereof, but including the loss of destruction, without beneficial use, resulting from evaporation seepage, leakage or fire, especially such loss or destruction incident to or resulting from the manner of spacing, equipping, operating, or producing, well or wells, or incident to or resulting from the use of inefficient storage or from the production of crude petroleum oil, natural gas, in excess of the reasonable market demand.

Issue of Orders

Section 3. Whenever the full production of oil or gas from any common source of supply in this state is in excess of the reasonable market demand, the commissioner of conservation shall inquire into and fix the reasonable market demand therefor and shall determine the allowable production from such common source of supply, which shall be the reasonable market demand which can be produced without waste. All orders for allowables shall be issued by the commissioner in writing, and notice thereof given as required by Section 7; and said orders shall be entered in full in a book to be kept by the commissioner as public records of the Department of Conservation. The commissioner of conservation shall allocate, distribute or apportion the allowable production from such common source of supply among the various producers on a reasonable basis, and shall limit the production of each producer to the amount allocated or apportioned to such producer. Such allowable shall afford to the producer of each property in a common source of supply the opportunity to produce his just and equitable share of the oil and gas being an amount, so far as can be practicably determined, and so far as can be practically obtained without waste, substantially in the proportion that the relative productivity of the wells on such property bears to the relative productivity of all wells in the common source of supply, and for this purpose to use his just and equitable share of the reservoir energy. The commissioner of conservation is authorized to ascertain the productivity of wells by open flow test or by any other practical method of testing wells; provided that when and if, in the judgment of the commissioner, the relative productivity of the wells in a particular common source of supply cannot be ascertained without waste, the allowable production may be fixed on a flat well or acreage basis, i.e., a certain amount of oil or gas per day for a given number of acres.

Section 4. In order to prevent unreasonable discrimination in favor of one common source of supply of crude petroleum oil or gas as against another, the commissioner of conservation is authoried to allocate or apportion the allowable production among the various common sources of supply of crude petroleum, oil or gas; provided, however, that in allocating or ascertaining the reasonable market demand for the whole state, the reasonable market demand of one common source of supply shall not be discriminated against in favor of any other source of supply; and provided further that the commissioner of conservation shall ascertain the reasonable market demand of each such respective common source of supply as the basis for determining the allotments to be assigned each such respective common source of supply, to the end that such discrimination may be prevented. In fixing the allowable production and the reasonable market demand of oil and gas the commissioner of conservation may take into consideration the total allowable production thereof as fixed in other states, in order that the state

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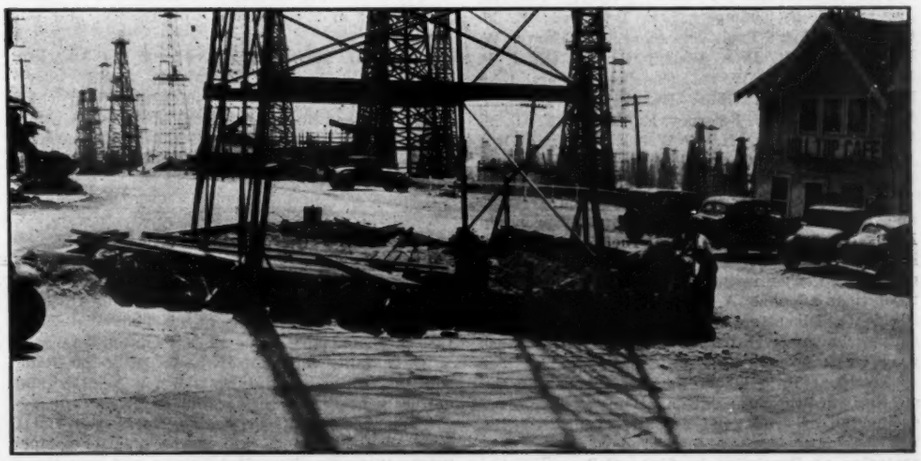
WORLD'S SMALLEST LEASE ON CALIFORNIA HILLTOP



What is reputed to be the smallest oil lease in the world is located at the intersection of Twenty-third Street and Raymond Avenue, Signal Hill oil field, Long Beach, Calif. This plot of ground was set aside by the city as a traffic island and measures about 24 feet wide by 30 feet long and provides just space enough for the erection of a steel derrick with a 6-foot space on one side for machinery. The plot contains 720 square feet, or .0165 acre.

To provide slush pits two 250-bbl. steel tanks have been sunk under the derrick and excess mud will be piped away from the location as made. The well is to be drilled with a steam rig and boilers will be set across the street and the steam piped to engine and slush pumps.

The property is leased by Jett Oil Co. and it is proposed to drill the well to develop the regular producing formations in this field, the top of which is found at about 2,300 feet and the bottom at about 5,575 feet.

of Louisiana may produce its just proportion of such minerals necessary to supply the market demand.

To Require Meters

The Department of Conservation shall have authority to require interested persons, firms or corporations to place uniform meters approved by it wherever it may designate on all pipe lines, gathering systems, barge terminals, loading racks, refineries, or other places deemed necessary or proper to prevent waste and the transportation of illegally produced oil or other minerals; that such meters at all times shall be under the supervision and control of the Department of Conservation; and it shall be a violation of this act, subject to the penalties provided in section 15, for any person, firm or corporation to refuse to attach or install such meter when ordered by the commissioner, or in any way to tamper with said meter, or to have any by-pass at such place where the oil, gas or other minerals can be passed around such meter.

In order to prevent waste of natural gas, or other minerals, the commissioner of conservation shall have authority to grant to bona fide applicants permits for the building and operation of plants for the refining of petroleum oil, to extract gasoline from natural gas and to burn natural gas into carbon black for such period of time as may be fixed by the commissioner in such permit, and subject at all times to the provisions of law and rules and regulations of the Department of Conservation; and it shall be a violation of this act for any person, firm or corporation to build or operate any such new plant without the permit above provided.

Without prejudice to the general authority conferred by this act, the commissioner of conservation is hereby empowered to adopt rules and regulations and to make orders on the following matters:

(1) Further defining and preventing underground and surface waste;

(2) Requiring operators, drilling contractors, drillers and producers to keep records including records of electrical surveys and logging, make reports, including a true copy of the record of any electrical survey or logging within 10 days after completion or abandonment of any wells, and to furnish such information as may be necessary for the proper enforcement of this act;

(3) To fix the spacing of wells;

(4) Providing for certificates of clearance and tenders to make effective the provisions of Section 14;

(5) Preventing the drilling of more wells or more productive operations than are reasonably necessary to drain oil and gas from any common source of supply;

May Permit Pooling

(6) Permitting the pooling of properties for drilling or productions if agreed upon, and if not agreed upon, to require pooling of properties in any case where the smallness or shape of a separately owned tract would, under the enforcement of a uniform spacing plan or proration unit, otherwise deprive or tend to deprive the owner of such tract of the opportunity to recover his just and equitable share of the crude petroleum oil and natural gas in the pool; provided, that the owner of any tract that is smaller than the drilling or production unit established for the field, shall not be deprived of the right to drill on and produce from such tract, if same can be done without waste. All orders requiring such pooling shall be upon terms and conditions that are just and reasonable, and will afford to the owner of each tract in the pool the opportunity to recover or receive his just and equitable share of the oil and gas in the pool as above provided, so far as may be practicably recovered without waste. In the event such pooling is required, the costs of development and operation of the pooled unit shall be limited to the lowest actual expenditures required for such purpose, including a reasonable charge for supervision; and in any case of any dispute as to such costs, the commissioner of conservation shall determine the proper costs.

(7) To require wells to be drilled, operated and produced in such manner as to prevent encroachment or neighboring leases or properties.

(8) To require the operation of wells with efficient gas-oil ratios, to require installation and use of an approved device to lower gas-oil ratios to prevent waste, and to fix such ratios.

Section 14. That all persons, firms, and corporations, including all common carriers are prohibited from transporting or marketing any oil or gas produced in violation of this act or in violation of any rule, regulation or order of the commissioner of conservation made hereunder, and all persons, firms and corporations are prohibited from doing or performing any act in violation of the provisions of this act or in violation of any regulation or order of the commissioner. Oil and gas produced in violation of this act shall be contraband and shall be subject to seizure and sale in a judicial proceeding in rem for forfeiture brought by the Department of Conservation in the district court of Baton Rouge, La., or in the district court of the parish where the commodity is found.

The court may order that said contraband be sold in specified lots or portions, and at specified intervals, instead of being sold at one time. Title to the amount sold shall pass as of the date of the seizure. The judgment shall provide for payment of the proceeds of the sale into the Department of Conservation for the purpose of carrying out the provisions of this act, after first deducting the costs and all expenses in connection with the proceedings and the sale.

Any person or party in interest who may show himself adversely affected by such seizure and sale shall have the right to intervene, for the protection of his rights.

Section 15. No person, firm, or corporation shall drill, produce, or operate any well in violation of this act or in violation of the rules, regulations, and orders of the commissioner of conservation made pursuant hereto. Any person, firm, or corporation who shall violate the provisions of this act or the rules, regulations, and orders of the Conservation Commission made pursuant hereto shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than $500 and not more than $1,000 and be imprisoned not less than three months and not more than two years for each offense.

Pennsylvania Grade Meeting Is Encouraged But Warned

By R. C. CONINE

STATE COLLEGE, Pa., June 22.—The Pennsylvania Grade Crude Oil Association at its thirteenth annual meeting here increased membership in the board of directors to 30 to add two, George Bovaird, Jr., Bradford producer, and R. G. Sonneborn, of the Sonneborn refining interests. To fill a marketing vacancy caused by the resignation of Noel Robinson, of Tide Water, the association named Dart Hoffman, of New York. Lyell Dinsmoor was elected to the board to succeed his father, the late J. D. Dinsmoor, of St. Marys, W. Va. The directors will meet in Oil City June 10 to elect officers.

The board of directors for 1936-37 follow: H. D. Atha, Mount Pleasant, Mich.; John A. Beck and Carl R. Daugherty, Butler; E. C. Breene, W. J. Brundred, S. Messer and C. L. Suhr, Oil City; W. F. Clinger, Harry R. Lewis, H. A. Logan and Paul Zook, Warren; Forest D. Dorn, Otto Koch, Parker L. Melvin, E. C. Emery, George Bovaird, Jr., and T. P. Thompson, Jr., Bradford; E. M. Craig, Freedom; Lyell Dinsmoor, St. Marys, W. Va.; Fayette B. Dow, Washington, D. C.; J. P. Flynn, Sistersville, W. Va.; Charles Huff and John McCoy, Columbus, Ohio; David B. McCalmont, Franklin; Daniel J. Sweeney, Buffalo, N. Y.; S. M. Vockel, Pittsburgh; N. H. Weber, Chicago; Dart Hoffman and R. G. Sonneborn, New York, and F. E. Richart, Wellsville, N. Y.

Elimination of the federal taxes on gasoline and lubricating oils, opposition to the proposed Pennsylvania state and federal fuel oil taxes, and banning of diversion of taxes provided for highway purposes to other uses were strongly urged in the resolutions adopted. A tribute to Clayton G. Dorn, James D. Dinsmoor and Stanley W. Rusk, long active members who passed away during the past year, was presented by D. J. Sweeney.

President T. P. Thompson, Jr., in opening the meeting, said the means are available to stem overproduction of crude and excessive runs to stills. The association's research and development laboratories at Pennsylvania State College provide means for continued leadership over technically strengthening competition. The Pennsylvania region must be prepared to increase its support of the association, or to return to the disorganized days of 13 years ago when the region's oil industry was on the verge of collapse.

Fayette B. Dow, chief counsel and vice president, who was scheduled to speak, was in Rochester, N. Y., where his mother is seriously ill. David B. McCalmont, Jr., spoke for Mr. Dow and presented a summary of successful attacks on fraudulent users of the Pennsylvania Grade name or emblem.

Dean F. C. Whitmore, of the school of chemistry and physics of Pennsylvania State College, discussed utilization of the results of research and showed that success in this field can wreck an older industry while it establishes a new one. Many companies, he said, are expanding research facilities as a measure of insurance against obsolescence.

Scientific Recovery

Although producers have been breaking away from their old attitude of resistance to change in methods for several years, it is only recently, C. C. Hogg, president of National Oil Co., Titusville, told the members, that secondary recovery problems have been tackled scientifically.

The problems which scientific research promises to solve were discussed in detail by Dr. Gerald L. Hassler in a recent issue of The Oil and Gas Journal.

Baird H. Markham, director of the American Petroleum Industries Committee, found "everywhere a strong tendency to enact legislation which will either handicap the normal business operation of the oil industry, which will add to its operating costs, or which will penalize it for the benefit of other industries."

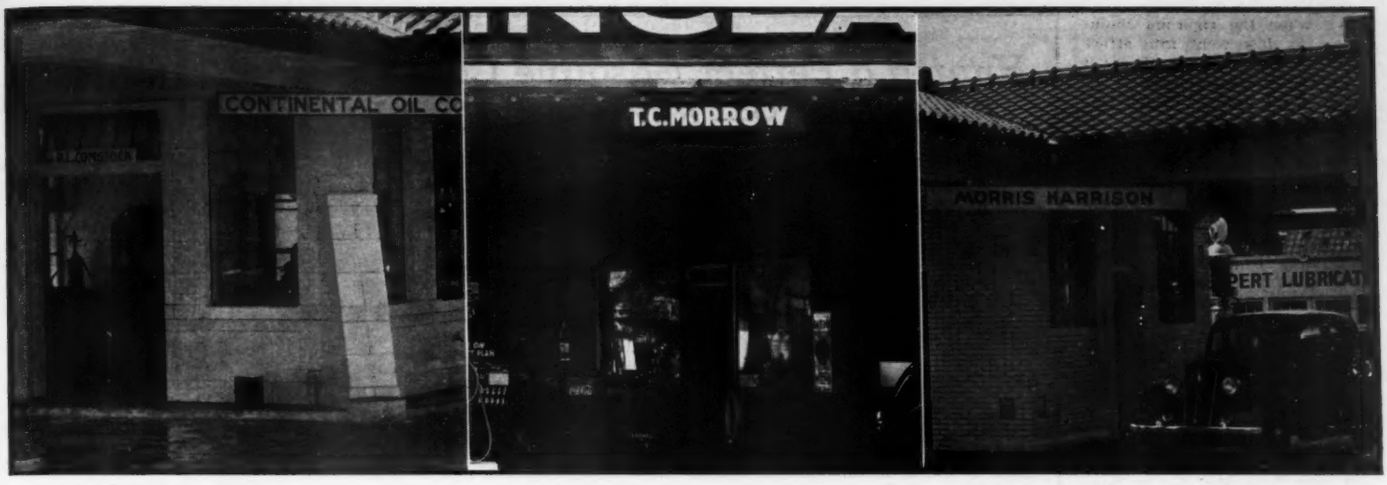
Phases of Research

Dr. M. R. Fenske, research director of the petroleum refining laboratories at the college, described research in general terms.

J. T. McCoy, general supervisor of the research and development department of Tide Water Oil Co., discussed the value of association research.

C. L. Suhr, chairman of the board of the Pennzoil Co., discussed the basis for a healthy and mutually profitable refiner-jobber relationship:

"Whether jobbers or small refiners, you and I can't change the fact that we have bitter competition, that sometimes it is worse and sometimes it doesn't get any better, and that, human nature being what it is, our larger competitors are not going to become philanthropic. They are after business, whether it is ours or yours or somebody else's. Our hope, it seems to me, lies in affirmative action, in better merchandising, in more intelligent economies, in insistence on quality products, and most important of all, in keeping ourselves together as a unit. There are few enough of us when we are all together. There may not be anything left of us if we get separated."



Iowa Plan of Leasing Filling Stations Is Spreading to Many Other Areas

By T. F. SMILEY

Iowa's chain-store tax law, the most drastic measure of its kind on any state's statute-books, will have been in operation one year next Tuesday, June 30. The twelvemonth has witnessed virtual disappearance from that state of company-owned and -controlled service stations, which fall within the prescription of the law. It has witnessed also, outside of Iowa, a significant movement among oil companies in the direction of leasing stations instead of operating them. General adoption of the straight-out Iowa plan is predicted by some observers.

The so-called Iowa plan comprehends leasing a station outright to an independent dealer and letting him manage it as his own. Adopted originally by oil companies as a means of saving their business in one state from destruction by confiscatory taxation, it has already been followed by important changes in selling methods throughout a wide territory and seems destined to breed fundamental alterations in marketing practice.

Lessees Responsible

Although Iowa filling stations for the most part are still owned or held under long-term lease by the companies which established them, their management is now in the hands of individual lessees, usually former employes of the company. These lessees, and not the company, are responsible for the pump prices of gasoline sold. They pay the electric-light, telephone and water bills. They buy the sponges, chamois, etc. They are free to handle any brands of gasoline and oil they choose, though former employes usually choose to retail the products of the company from whose salaried service they have graduated.

The Standard Oil Co. (Indiana), recognized as the key marketing organization in Iowa, is credited with having initiated the Iowa plan. Other companies operating filling stations in the state adopted policies practically identical with that of the Indiana Standard. How completely these companies have divorced themselves from management of service stations is indicated by the following excerpt from a typical lease agreement:

"It is expressly understood and agreed by the parties hereto that during the time lessee is in possession of the leased premises and equipment under the lease the lessor has and shall have no right of control over said premises and equipment and shall have no right or authority in respect to the management, supervision or control thereof or the business conducted in connection therewith by the lessee."

Thus it is seen the oil companies practically went out of the business of operating retail outlets in Iowa. This involved a particularly revolutionary change for the Indiana Standard, which more than any other company perhaps had avoided leasing out its stations, its definite policy having been to own and operate its own service stations. As months passed and the results of the different marketing methods were analyzed it became increasingly plain that it had much to recommend it, so much in fact that last spring President Edward G. Seubert, in a report to stockholders said:

"The results have been rather surprising. While it has been impossible to maintain uniformity of free service, and there has probably been some decline in the employment provided in the stations, the company's sales have not suffered. On the contrary, the quantities of products distributed to the same stations have measurably increased.

"On the basis of this experience it has been decided to place the operation of company-owned stations, as largely as possible in the hands of independent dealers, to whom the company becomes lessor, wholesaler, supplier, and adviser, instead of employer. Large numbers of stations in other states have already been converted into such dealer outlets, and in the course of this conversion many former employes have become dealers in their own right, able to develop their own retail business as they see fit."

Points of Difference

Two essential points of difference lie between the Iowa plan as it is operated in Iowa and the modified Iowa plan described by President Seubert. In the plan as it is operated in Iowa the company relinquishes all control of management. The independent dealer leasing the station may sell his gasoline and other products at whatever price he chooses. If he decides to sell at a loss in an attempt to run a competitor out of business, that is his own concern, not the company's. He can charge as much, or as little, as he wants to for greasing and washing jobs. If he should prefer to switch to some other company's products, there is not a thing in the lease to prevent him from doing so. In modifications of the Iowa plan adopted in territory outside that state the company requires the lessee to handle its products and it retains virtual control of prices by selling the products to the lessee at certain discounts from the service station prices posted at its bulk plants.

The lease agreements commonly used, both in Iowa and outside the state, contain cancellation provisions which, even in the absence of any other considerations, tend strongly to keep the independent dealer from straying far from sound business practices as he understands them.

Changing Signs

The Indiana Standard, in extending the modified Iowa plan throughout its marketing territory, is removing from all leased stations identification signs which read, "Filling Station, Standard Oil Co. (John Doe, Agent)" or "Filling Station, Standard Oil Co. (Indiana)." Hereafter dealer stations will be identified by signs reading, "Standard Service," "Standard Oil Products," or something similar, indicating merely that the company's products are handled by the dealer. In conjunction with the new sign the lessee may use his own name or any station name he desires to adopt. Other companies are following the same procedure.

The idea of leasing company-owned or -controlled stations outright to independent dealers did not spring up suddenly with the passage of the Iowa chain-store tax law. The Iowa law did serve, however, to impart a tremendous impetus to the practice. The Mid-Continent Petroleum Corp. and the Sinclair Refining Co., for instance, began trying out the method many years ago. By 1930 Mid-Continent had 15 or 20 per cent of its stations leased in its marketing territory in Indiana, Illinois, Kentucky, Iowa, Kansas, Wisconsin, Nebraska, Missouri, Oklahoma and Arkansas. At the present time 99 per cent of its stations are leased to independent dealers. There has been similar extension of the plan by Sinclair, which now does not have a company-operated station in Oklahoma and has only a few in Texas, with greatly reduced numbers of them in other states. President Seubert reported that more than 4,000 stations formerly owned or controlled by Indiana had been leased to independent dealers and that the number was growing steadily.

Other companies, especially those operating in

Iowa when the rigorous chain-store tax law went into effect and including the Marathon Oil Co., Phillips Petroleum Co., Continental Oil Co., Skelly Oil Co., Cities Service Oil Co. and Texas Co. have been adopting modifications of the Iowa plan outside that state in varying degrees. In the cases of the Mid-Continent Petroleum Corp. and the Sinclair Refining Co., those organizations had virtually all their stations in Iowa already leased to independent dealers when the law became operative. Relatively small changes in their forms of lease agreement were required to bring them into conformity with what is now designated as the Iowa plan.

The modified Iowa plan now is quite generally in operation not only throughout the marketing territory of the Standard Oil Co. (Indiana), but also in Texas and Arkansas.

Inside Iowa gasoline is sold to the independent station operator at a "dealer's price," which normally is 1½ cents under the established tank-wagon price. If the tank-wagon price is 15 cents a gallon, the dealer pays 13½ cents. Anybody who buys 25 gallons or more may buy at the tank-wagon price.

So widely has the plan of leasing stations been adopted that it would seem to be a comparatively short step to adoption of the straight-out Iowa plan. Some observers predict that this is precisely what is in prospect. They point to various conditions supporting their opinion.

For one thing, adoption of the chain-store tax by other states is regarded as assured. Indiana and Wisconsin have such laws, though not in such drastic form as the one in Iowa.

Notice of intention to circulate an initiative petition proposing a heavy graduated tax on chain stores in Oklahoma was filed with the secretary of state by Oklahoma City residents last week. The proposal, which would include filling stations, fixes a license tax of $1 for a single store, $25 for each additional store up to and including 5, and would increase the tax sharply for all stores beyond that number, as follows: Six to 10 inclusive, $1,000 each; 11 to 15, $1,500 each; 16 to 20, $2,500 each; 21 to 30, $3,500 each; 31 to 50, $5,000 each; 51 to 75, $6,000 each; for each above 75, $7,500.

With the object-lesson of Iowa before them, oil companies are not failing to lay their plans in order to be ready for similar situations in other states.

Under the company ownership or control plan the company must shoulder the responsibility of stabilizing markets to the extent of its ability. When the retail sales are turned over to an independent dealer that dealer must take the responsibility himself. The difference of viewpoint between the major marketer and the independent dealer on the question of prices has become traditional. It is a common contention of the independent dealer that he should be allowed to sell unadvertised gasoline for less than the major because the latter has the advantage which accompanies a widely publicized house brand of motor fuel. This contention comes with particular vehemence from the owner of a trackside station.

An allied problem is presented by the fact that the major marketer must observe certain working hours at his stations, must pay established rates of wages to employes and must have high standards of neatness, cleanliness and courtesy observed. The independent operator usually conducts the station himself and may work as many hours as he chooses. Wages present a minor problem and perhaps no problem at all, for there may be none to be paid. As for standards of service the independent operator may make them what he pleases.

Such considerations as these long have made competition between the major and the independent an irritating, trouble-clustered thing. Adoption of the Iowa plan removes competition, so far as the major company is concerned, and with it the irritations.

Certain expenses that inhere in the operation of a large company, such as those created by social-security legislation, are removed by leasing a station instead of employing men to run it. Union activities cease to be a problem.

The evils that go with the marginal contract are swept aside with adoption of the Iowa plan.

Besides getting rid of a large collection of tribulations, it is the virtually unanimous testimony of companies which have turned their stations over to independent operators that these operators, facing the fact that the size of their incomes depends upon the quality of their service and the number of friendships they establish, work more faithfully than ever before to build up a profitable business, with the result that a man sells more gasoline and oil as a dealer than he does as a salaried manager of a station.

Hunted a Perfect Gasoline Contract Back in 1919—But Didn't Find It

A reader of The Oil and Gas Journal recently unearthed from his desk the following record, written in 1919 or early 1920 and of undetermined authorship:

A HISTORY OF GASOLINE CONTRACTS

(By one who knows absolutely nothing whatever about 'em having been in the business **only 15 years.** Has been on both ends of them, and frequently in the middle, getting it in the neck from both sides.)

Away back in the days before the first filling station and selling gasoline was an ordinary merchandising enterprise the same as selling books, bricks or county rights on patent egg-beaters, washing-machines, and things like that, and the only juice that would run a stem-winding horseless carriage was 68-70 straightrun (275 end point, 8 cents a gallon, f.o.b. refinery, all outages, complaints and 90 days allowed) the contract butted in Purely to Guarantee a Supply. Accordingly we had:

No. 1, the contract on a flat price per gallon. This one didn't seem to work out so well, because one of the parties had a fire, or crude went up a nickel that year, **so came into use**

No. 2, the gasoline contract based on crude, the price to vary an eighth with every five-cent variation in crude. This worked about a month, and after a couple of years of wrangling **there was used**

No. 3, the supply contract, which set the price the first of each month. This was too open to argument and kept a man as busy as a one-armed paper-hanger with the hives. **So along comes**

No. 4, the gasoline contract based on the tank-wagon market in Montana or Patagonia, or some such place about a thousand miles away from destination. After one or two price battles in the wrong market **someone invented**

No. 5, the gasoline contract based on the tank-wagon at destination. Someone must have made a couple of dollars on this, because **the next one**

No. 6, contained a bunch of assorted jokers, controlling the fluctuation. Now you can **paste it in your hat that**

No. 7, which is just around the corner, will be based on the average daily rainfall in Siberia, the Swiss Navy's mean annual ski mileage per ton at 70°F.

When someone does evolve a gasoline contract which is absolutely equitable and covers every possible contingency, which gives a man control of his business, guarantees his receivables 100%, an eight-hour day with double pay and a full dinner pail, it's going to take two years to write the document. This perfect gasoline contract will probably be published in serial form, and the finished work, on India paper, bound in full bullskin, will weigh about 12 pounds dressed.

Make these principles work for you: Buy when everyone is selling; sell when everyone is buying. In other words, have your tanks empty on a declining market, and full on a rising market. Your judgment will tell you just how much storage to have. And—

Your credit will be good, your business will be sound and you can't get nicked more than 30 days in a row to save your neck.

S. E. C. Regulations

WASHINGTON, D. C., June 22.—The Securities and Exchange Commission has amended its rules on the exemption of oil and gas interests contained in Regulation B of the General Rules under the Securities Act which sets forth conditions under which offerings not exceeding $100,000 of certain types of these interests may be exempted from registration under the act.

The issuance of suspension orders is covered in a new rule, 340. Paragraph (a) provides that the commission may issue a temporary suspension order if it has reasonable grounds for believing the offering sheet is incomplete or inaccurate in any material respect; it also provides that a temporary suspension order must be entered within seven days after filing of the offering sheet and it may remain in effect for a period not exceeding 30 days. An opportunity for hearing on these matters will be granted by the commission within 15 days after the notice is issued.

Paragraph (b) of Rule 340 provides the commission may at any time issue an order unlimited in duration, suspending the effectiveness of the filing of any offering sheet, or continuing in effect the suspension effected by a prior temporary order, if it finds the offering sheet contains an untrue statement of a material fact or omits to state a material fact. An order of this type may be entered only after notice and opportunity for hearing has been afforded under either Paragraph (a) or (b) of the rule. A footnote to the rule outlines a proposed procedure providing for informal conferences between the person filing the sheet and designated officers of the commission. It is expected these conferences may result in clarification of respects in which the offering sheet may require amendment and, as a result, amendments will be made which will justify terminating such proceedings as have been instituted, and avoid the necessity for issuing suspension orders.

To supplement Rule 340 the commission has adopted Rule 341, which in effect permits the amendment of offering sheets at any time between the issuance of a suspension order and the termination of suspension proceedings. Previously no amendments to offering sheets were permitted.

Rule 330 has been amended to provide in general that an offering sheet shall be deemed to comply with requirements of the regulation if the statements made are in substance responsive to the requirements of the appropriate schedule.

As to filing of estimates of the amount of oil and gas recoverable in the tracts covered by the offering sheet, the commission has ruled these estimates may be omitted provided reasons for the omission are set forth. But if this information is omitted, the commission has forbidden the offeror to make any representation to an investor as to the amount of oil and gas recoverable. Furthermore, for the protection of investors, the commission has ruled that henceforth, when such estimates are filed, the amount estimated to be recoverable from already produced properties must be segregated from the amount applying to properties not in actual production.

Other amendments include a change in Paragraph 6 of Rule 331 to provide that the information contained in offering sheets shall be as of a date not more than 110 days prior to the delivery of the offering sheet to the purchaser. Under the rule as formerly in effect, time limits were imposed of 90 days in the case of producing interests and 120 days in the case of nonproducing interests.

The amendments become effective on July 1, subject to the condition that any offering sheet filed on or before that date, Schedules A to H, as effective prior to the amendments, will be considered to meet the requirements of the regulations.

Ten Per Cent Gasoline Demand Gain

Proves Steadying Factor in Situation

The total demand for motor fuels the first four months of this year increased almost 10 per cent over the same period in 1935, based on refinery shipments. For the same period the gain in gas and fuel oil demand was better than 14 per cent.

The gains in outlets for these two classes of products, which together represent more than 80 per cent of a barrel of crude oil, are the outstanding situations shown in the latest report of the Bureau of Mines, which covers April operations and gives summaries for the first four months of this year. The gain in demand for motor fuels is accounted for by an increase of 9.5 per cent in domestic and 12.8 per cent in export shipments. The total gain of 9.8 per cent is approximately 3 per cent greater than estimates made earlier in the year. The same situation is found in the fuel oil and gas oil demand, which for the four months were approximately 5 per cent greater than estimates made several months ago.

These near record gains in the industry's two principal products are the explanation of why the industry's statistical situation, as summarized in the accompanying table, remains fairly satisfactory despite a record production of crude petroleum and crude runs to stills for the four-month period. Domestic production of crude oil increased 13 per cent for the four months and crude runs to stills showed the same percentage gain. This rate of crude production brought increases in crude oil stocks in March and April, which totaled approximately 4,500,000 bbls. Gains in motor fuel stocks starting the first of the year were also excessive and on April 30, including finished and unfinished refinery gasoline and natural gasoline, the increase over the same period last year was almost 15,000,000 bbls., or 23 per cent. It is apparent that this crude and motor fuel stock situation would have become topheavy had the gain in demand for the first four months been around 6 or 7 per cent, as expected before the start of the new year.

Kerosene domestic demand continues to point to a record demand for the year, and with production less than last year, stocks have decreased. Exports of kerosene are less than last year. The lubricating oil demand, which has been aided by an increase in industrial requirements, increased 11.2 per cent in the domestic end. Exports decreased so that the total demand for the four months was only 7 per cent ahead of last year. The wax statistical situation did not show any improvement in April. Supplies for the four months exceeded the demand.

Crude Oil and Refinery Situation Summarized — First Four Months

Supply and Demand—Crude Oil (Bbls.)

First 4 months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Apr. 30
1936	361,791,000	361,036,000	*758,000	*.2	351,987,000	9,804,000	347,597,000	13,439,000	315,389,000
1935	320,514,000	317,975,000	*2,539,000	*.8	311,393,000	9,121,000	305,745,000	12,230,000	339,793,000
Increase, 1936	41,277,000	43,061,000	.....	.....	40,594,000	683,000	41,852,000	1,209,000	†24,404,000
Increase, 1936	12.8%	13.5%	.....	.....	13%	7.4%	13.6%	9.8%	†7.1%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

First 4 months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Apr. 30§
1936	159,976,000	142,711,000	*17,265,000	*12.0	159,976,000	.....	134,324,000	8,387,000	78,567,000
1935	142,064,000	130,007,000	*12,057,000	*9.3	142,044,000	20,000	122,573,000	7,434,000	63,804,000
Increase, 1936	17,912,000	12,704,000	.....	.....	17,932,000	.....	11,751,000	953,000	†14,763,000
Increase, 1936	12.6%	9.8%	.....	.....	12.6%	.....	9.5%	12.8%	†23.3%
Kerosene									
1936	18,901,000	20,320,000	1,419,000	6.3	18,900,000	1,000	18,366,000	1,954,000	6,496,000
1935	19,342,000	18,854,000	*488,000	*2.5	19,342,000	.....	16,606,000	2,248,000	6,886,000
Increase, 1936	†441,000	1,466,000	.....	.....	†442,000	.....	1,760,000	†294,000	†390,000
Increase, 1936	†2.2%	7.7%	.....	.....	†2.2%	.....	10.6%	†13.0%	†5.6%
Gas Oil and Fuel Oil									
1936	146,980,000	153,208,000	6,300,000	4.2	141,857,000	5,173,000	142,554,000	10,654,000	97,756,000
1935	122,491,000	134,161,000	11,676,000	9.5	115,140,000	7,351,000	126,470,000	7,691,000	97,727,000
Increase, 1936	24,489,000	19,047,000	.....	.....	26,717,000	†2,728,000	16,084,000	2,963,000	29,000
Increase, 1936	20.0%	14.2%	.....	.....	23.2%	†30.3%	12.7%	38.5%	.....
Lubricating Oils									
1936	9,716,000	9,697,000	*19,000	.2	9,715,000	1,000	6,976,000	2,721,000	7,044,000
1935	8,763,000	9,068,000	305,000	3.4	8,763,000	.....	6,273,000	2,795,000	7,026,000
Increase, 1936	953,000	629,000	.....	.....	952,000	.....	703,000	†74,000	18,000
Increase, 1936	10.8%	6.9%	.....	.....	10.8%	.....	11.2%	†2.6%	.2%
Petroleum Wax (Lbs.)									
1936	168,619,000	161,437,000	*7,182,000	*4.4	162,680,000	5,939,000	98,170,000	63,267,000	121,857,000
1935	161,570,000	153,553,000	*8,017,000	*5.2	152,600,000	8,970,000	82,763,000	70,790,000	144,153,000
Increase, 1936	7,049,000	7,884,000	.....	.....	10,080,000	†3,031,000	15,407,000	†7,523,000	†22,296,000
Increase, 1936	4.3%	5.1%	.....	.....	6.6%	†33.7%	18.6%	†10.6%	†15.4%

*Excess supply. †Decrease. Note—Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments. ‡Crude oil only. §Includes finished, unfinished refinery gasoline and natural gasoline.

Crude Oil Runs to Stills and Total All Oils (Bbls.)

First 4 months—	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline	Nat. gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils Apr. 30
1936	17,010,000	37,971,000	337,130,000	46.4%	13,492,000	383,238,000	373,819,000	551,119,000
1935	16,638,000	33,340,000	297,969,000	46.3%	12,523,000	341,140,000	335,750,000	569,538,000
Increase, 1936	372,000	3,631,000	39,161,000	.....	969,000	42,098,000	38,069,000	†18,419,000
Increase, 1936	2.2%	10.8%	13.1%	.....	7.7%	12.3%	11.3%	†3.2%

*Total all oils includes crude refined products, natural gasoline and benzol. †Decrease. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

Pipe Line Activity

East Texas-Rodessa Sale

SHREVEPORT, La., June 22.—Papers conveying the East Texas Co. pipe line from Rodessa to the East Texas field to an official of the United Gas Co. were filed here and in Marshall, Tex. The companies conveying the property were the East Texas Pipe Line Co. and Eastern Texas Petroleum Co., both headed by F. W. Burford of Dallas.

The new owner was listed as W. F. Hartwig, assistant to the general superintendent of United Gas at Houston. Consideration recited was $100 and "other good and valuable considerations." Property conveyed includes a 59-mile 8-inch pipe line from the Sexton farm in Rodessa to Greggtown, with line, pumping stations, gathering lines at Rodessa and rights of way, easements and other assets.

Excepted from the sale was oil in storage and in transit. This pipe line sprang into prominence several weeks ago as the carrier handling oil from the Pelican Oil & Gasoline Co. lease, which was given a special allowable of 20,000 bbls. per day for its 13 wells while the allowable per well ruling in the pool was 350 bbls.

Subsequently a federal court ruled that the oil, despite the special permit, was not entitled to move in interstate commerce. Immediately after the sale the Pelican lease was connected by Shoreline Oil Co. (G. M. Leonard and others).

Grand Rapids May Buy Line

MUSKEGON, Mich., June 22.—Grand Rapids Gas Light Co., Michigan subsidiary of American Light & Traction Co., this week will complete a 45-mile, 10-inch natural gas line from the tri-townships field of Mecosta and Montcalm Counties to Grand Rapids.

The company has a permit to serve Grand Rapids, a city of 175,000 and second largest in Michigan, with a 50-50 mixture of natural and manufactured gas. City officials, company executives and producers have been seeking to obtain a 100-per cent permit from the State Public Utilities Commission.

The city commission last week voted to hold a special election July 20 on a proposal to acquire the pipe line, gathering system and rights of way with a $950,000 bond issue. The system then would be operated as a public utility. A three-fifths majority is required. A proposal to prohibit the gas company from distributing 50-50 gas pending final action on the plan to buy the line outright was defeated in city commission meeting. City Attorney Ganson Taggart has ruled the city will have the right to draw 100 per cent natural gas from central Michigan fields without state approval, whereas the gas company must obtain a permit.

A gas company petition for the right to distribute 100 per cent natural fuel is now pending before the state commission. A separate petition for permission to lay a 20-mile extension of gathering line from Belvidere Township, Montcalm County, to New Haven Township, Gratiot County, will be heard in Lansing July 17 before the state commission.

May Sell Rodessa Line

SHREVEPORT, La., June 22.—It is rumored here that the United Gas System will not operate the Longview-Rodessa 8-inch line it purchased from East Texas Pipe Line Co., but will resell it in the near future. Atlantic Pipe Line Co., which several months ago surveyed route for a line from East Texas to Rodessa, and the Illinois Pipe Line Co. are reported among those bidding for the line from the United.

Michigan Extension

MUSKEGON, Mich., June 22.—Consumers Power Co. last week started laying about 5 miles of 4-inch gathering line from gas wells in the New Haven-Sumner Township gas field in Gratiot County, Mich., to connect with a 10-inch main line to Lansing and 25 nearby central Michigan communities.

The 25 smaller communities began receiving natural gas last week through the Consumers line. They include East Lansing, Grand Lodge, Hastings, Lake Odessa, Ionia, Mulliken, Nashville, Portland, Vermontville, Lake Chemung, Charlotte, Woodland, Sunfield, Eaton Rapids, Okemos, Lake Lansing, Mason, Holt, Leslie, Howell, Williamston, Webberville, Brighton, Fowlerville and Haslett.

White Eagle Line

Right of way is being obtained by the White Eagle division of Socony-Vacuum Co., Inc., for its proposed 178-mile gasoline pipe line to extend from the company's refinery at Augusta to Kansas City, Kans.

White Eagle officials announced the project will cost $1,500,000. Of this sum, $300,000 will be spent for the construction of the unit's terminal on the west bank of the Missouri River. The line, which will be run through Topeka, will have a smaller terminal in that city.

Refinery Projects

Ohio Standard Unit

NEW YORK, June 22.—Contract is to be let in July by Standard Oil Co. of Ohio for a combination crude distilling and cracking unit costing $1,500,000 at its Toledo, Ohio, refinery. Approximately one year will be required for the construction program and the combination unit will have capacity of about 12,000 bbls. per day.

Standard of Ohio's Toledo plant now has a rated capacity of 12,000 bbls. per day skimming and 6,500 bbls. through its cracking facilities. The latter is the Tube and Tank type.

The company has recently participated in construction of a line from the Mount Pleasant, Mich., district terminating at Toledo which is expected to provide additional crude supplies for the larger unit. The line is operated under the name of Simrall Pipe Line Co.

Standard of Ohio has a minor interest in the Ajax Pipe Line Co. system originating in Oklahoma, which provides connection with the old Standard pipe line network in the eastern district. Much of the crude processed in the Toledo plant has been delivered through the Ajax artery in the past.

F. E. Shryock, superintendent of Pampa refinery, Danciger Oil Co., and L. E. Veck, assistant superintendent

New Coastal Units

HOUSTON, Tex., June 22.—Coastal Refineries, Inc., has let a contract for the erection of a 1,250,000-foot per day vapor recovery plant and 600-bbl. per day pressure distillate stabilizing unit for its Port Isabel refinery to Petroleum Engineering, Inc. The work is expected to be completed within 10 weeks.

Barnsdall Erecting New Unit

WICHITA, Kans., June 20.—Construction is now under way to install a 6,000-bbl., two-coil Dubbs cracking and topping unit at the refinery of the Barnsdall Refining Co. located here. Frick-Reid Supply Corp. is in charge on the construction.

Vapor Recovery Plant

HOUSTON, Tex., June 22.—The Corpus Christi Refining Co. has let the contract on a 1,500,000 foot per day vapor recovery plant and a 1,250 bbl. per day stabilizing unit at its Corpus Christi refinery to Petroleum Engineering, Inc., of Tulsa. The plant is a vapor rectification type and embodies the latest features of fractionation.

Lethbridge Refinery

LETHBRIDGE, Alberta, June 20. — It is expected that the new refinery of the Huff Refining Co. in South Lethbridge will be ready to operate early in July. Crude will be trucked to the plant from the Montana fields.

Fire Damages Falls Refinery

WICHITA FALLS, Tex., June 20.—The main plant of the Falls Refining Co. was destroyed last Wednesday night when fire, believed to have been started from an explosion of one of the four stills, broke out in the refinery. First estimates of damage to the plant was placed at $40,000.

Alberta Refinery Planned

CALGARY, Alberta, June 20.—Hydro Pete Oils, Ltd., headed by P. L. Hyde of Calgary, is planning to erect a 200-bbl. refinery at a point in southern Alberta to be decided following a survey of the area surrounding Vulcan, Olds, Three Hills and Beiseker. The plant, to cost around $30,000, will be erected by the North West Engineering Co. of Regina, Saskatchewan, and will employ about 30 men.

Bureau of Mines Recommendations

WASHINGTON, D. C., June 23.—Daily average production of crude oil for July as recommended by the Bureau of Mines is 2,917,200 bbls., an increase of 78,900 bbls. over June, and 10 per cent above the recommendation for July, 1935. It provides for withdrawal of 112,500 bbls. daily from stocks.

Domestic motor fuel demand for July is estimated as 46,480,000 bbls., a daily average of 1,490,000 bbls., a gain of 12 per cent above indicated demand for July, 1935.

Motor fuel exports are estimated at 2,400,000 bbls., an increase of 350,000 bbls. over June estimate, but 622,000 bbls. less than actual exports during July, 1935.

The recommended crude requirements of the principal states follows:

Texas, 1,146,500 bbls.; Oklahoma, 569,800 bbls.; California, 550,800 bbls.; Louisiana, 186,800 bbls.; Kansas, 164,200 bbls.; and New Mexico, 69,400 bbls.

Natural Gas News

New Director of A.G.A.

T. J. Strickler, vice president and general manager of the Kansas City Gas Co., has been elected a director of the American Gas Associa-

T. J. STRICKLER

tion to fill the unexpired term of the late Judge H. O. Caster, which expires in November, 1937.

Mr. Strickler, who is chairman of the committee to conduct national advertising, has been active for years in the association, having served on many important committees and in 1932 as chairman of the natural gas department. He was recently reelected a director of the Chamber of Commerce of the United States.

Louisiana Tax on Gas

SHREVEPORT, La., June 22.—Efforts of the Louisiana state administration to heap additional taxes upon the natural gas industry of the state became evident again this week. Hidden in a house bill providing for a tax upon all bills of lading covering shipments within the state (including oil and gas pipe lines) was the provision for placing a tax of 3 cents on each 500 bbls. of crude oil and an equal amount of each 5,000 feet of natural gas moved. This bill was reported on favorably by the house ways and means committee, and it is expected to be before the house soon.

Upon consideration of the relative values of the two products being moved by pipe lines, it is quite evident that the tax is one pointed directly at the natural gas industry. The value of 500 bbls. of crude oil, at top price, would amount to $540.00. On the other hand, a similar tax upon each 5,000 feet of gas moved (having a value of from 3 cents to 5 cents per thousand feet in Louisiana) would amount to from 10 to 20 per cent assessment upon the actual valuation. In some cases it would practically amount to confiscation.

Reserves of Helium

Despite the production last year of over 10,000,000 feet of helium gas from the government plant at Amarillo, Tex., an adequate supply for purposes of national defense remains for a long time to come, says the annual report of the Secretary of the Interior.

Studies by the Bureau of Mines on the rock pressures of the gas in the field indicate that only slightly more than 2 per cent of the gas reserves has been used in the six years of operation of the plant. Sixty-eight million feet of helium gas have been produced in that time with increasing purity, which this year reached a new record—98.33 per cent, says the report.

Shreveport Inquiry

BATON ROUGE, La., June 22.—Harvey G. Fields, district public service commissioner, after an examination of the complaint of the city of Shreveport against Arkansas Louisiana Gas Co., before the state commisison, said:

"This commission should carefully investigate the situation at Shreveport as to service, meter charges, certain parts of the rate structure now applying in that city, as well as meter charges and complaints referring to discrimination.

"Leaving the question of the investigation as a separate one, I feel that the utility, and the officers in charge of the management of its affairs in Shreveport, should strive to work in concert with the city authorities and its patrons and consumers, which can be done if they so desire, but which, from my past observations in the last few months has not been done, I would much prefer to see them harmoniously arranged and adjusted by the officials of the gas company in the proper manner and spirit."

Natural Gasoline

California Stocks Decline

The production of natural gasoline in California during April remained at 36,000 bbls. daily, while refinery utilization decreased 4,000 bbls. daily to 29,000 bbls. daily and shipments increased 3,000 bbls. daily to 4,000 bbls. daily, according to the Pacific offices of the Bureau of Mines. Stocks decreased 6,000 bbls. during April to 1,891,000 bbls. Stocks a year ago were 2,911,000 bbls.

CALIFORNIA NATURAL GASOLINE PLANT OPERATIONS

April, 1936

Field:	Gas treated (M.cu.ft.)	Nat. gaso. produced (gallons)	No.	Plants op. daily cap. (M.cu.ft.)
San Joaquin Valley:				
Elk Hills	68,717	123,345	2	10,000
Ket'man Hills	9,699,387	13,135,084	7	615,000
Midway-Sunset	1,094,426	2,137,110	9	69,500
Mountain View	1,218,340	1,238,632	4	55,000
Miscellaneous	2,110,532	1,407,676	4	77,300
Coastal Region:				
Elwood	520,766	1,016,410	3	58,000
Rincon	68,374	123,265	2	10,000
Santa Maria	121,522	344,628	3	9,500
Ventura Ave	3,134,315	3,596,348	5	206,000
Miscellaneous	305,946	308,125	5	12,650
Los Angeles Basin:				
Brea-Olinda & Coyote	545,821	1,532,573	7	85,000
Dominguez	1,289,965	1,860,004	2	40,000
Huntington B.	1,807,746	3,688,813	6	99,500
Inglewood	198,981	249,333	2	9,500
Long Beach	2,015,568	7,209,667	10	236,000
Playa del Rey	479,175	1,310,702	2	68,000
Richfield	209,387	376,257	2	35,000
Rosecrans	541,057	655,434	2	23,000
Santa Fe Spgs.	2,166,185	4,300,317	6	345,000
Seal Beach	468,514	679,672	1	15,000
Torrance	97,589	195,392	2	8,000
Miscellaneous	122,168	185,335	3	8,000
Totals (all fields)	28,283,981	45,674,121	89	2,093,950

DISTRIBUTION (Gallons)

Stocks beginning of month	3,286,973	
Production during month	45,674,121	
Delivered to refineries		45,217,757
Delivered to jobbers, brokers, or blenders		1,843,466
Blended at plants for production of motor fuel		7,642
Losses		81,791
Stocks end of month		1,810,438
Totals	48,961,094	48,961,094

Liquefied petroleum gas production 1,445,347 gallons = 34,413 bbls.
Motor fuel produced 12,222 gallons = 291 bbls.

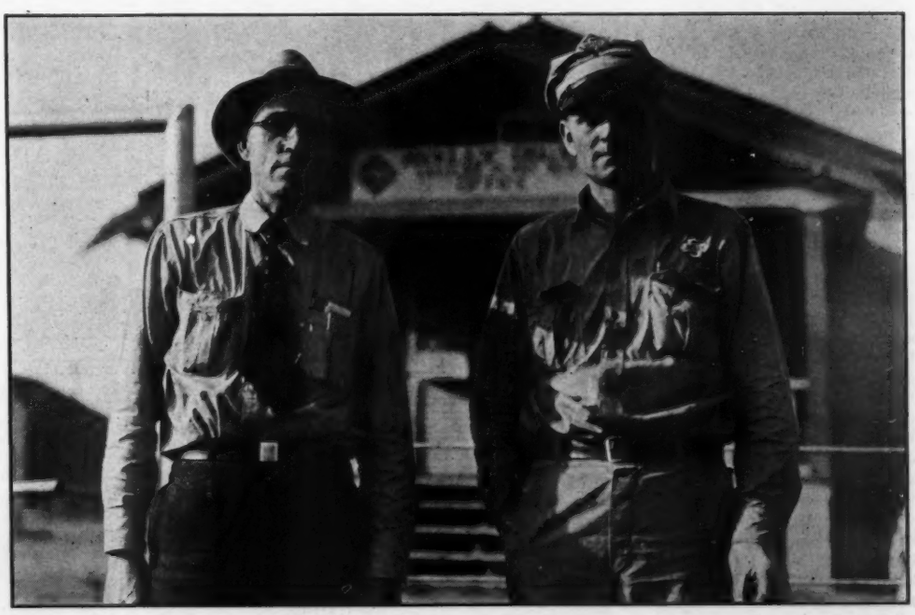
New Michigan Plant

MUSKEGON, Mich., June 22.—O. H. Grimes Co., operators of one of Michigan's two casinghead gasoline plants in central Michigan fields, has started construction of a third plant in the Yost-Jasper Township area in Midland County.

The new plant will have a capacity of about 3,000,000 feet of gas daily and will be completed within two months under the direction of Robert Chisholm, superintendent of the Grimes plant in the original Mount Pleasant field of Chippewa and Greendale Townships, Isabella and Midland Counties.

The Grimes company has contracted for the casinghead output of 45 Pure Oil Co. wells, a number expected to be doubled within a year. The field is controlled by Pure, with wells being drilled one to 20 acres.

Apex Gasoline Co. operates the other plant in the Porter Township, Midland County, field.



L. Barrett, superintendent, Skelly gasoline plant; A. W. Edson, chief operator, Seminole, Okla.

Drilling Has Been Started on Several Large Blocks in Eastern Colorado

By T. R. INGRAM and RUSSELL H. VOLK

DENVER, Colo., June 22.—When the major oil companies expend between $10,000,000 and $12,000,000 for legal work, geological and geophysical surveys and for leases and royalties in an area comparable in size with the state of Ohio before they drill a single test, it is reasonable to assume that one of the biggest strictly wildcat plays is gathering considerable momentum. That tells what is being done in eastern Colorado.

The region comprises approximately 40,000 square miles extending from the Nebraska-Wyoming boundary on the north to the New Mexico-Oklahoma border on the south, 270 miles, and from the eastern front of the mountain range to the Kansas line, approximately 150 miles. Not included is the overflow area into western Nebraska where one major company has leased almost an entire county; western Kansas, which already is in the midst of its play; nor southeastern Wyoming, where the companies are more active than they will admit. The regional geology is much the same in the entire area and all of it might properly be included. However, it is in eastern Colorado where most of the preliminary investigations and leasings have been completed and the time has arrived for the drill to tell the remainder of the story.

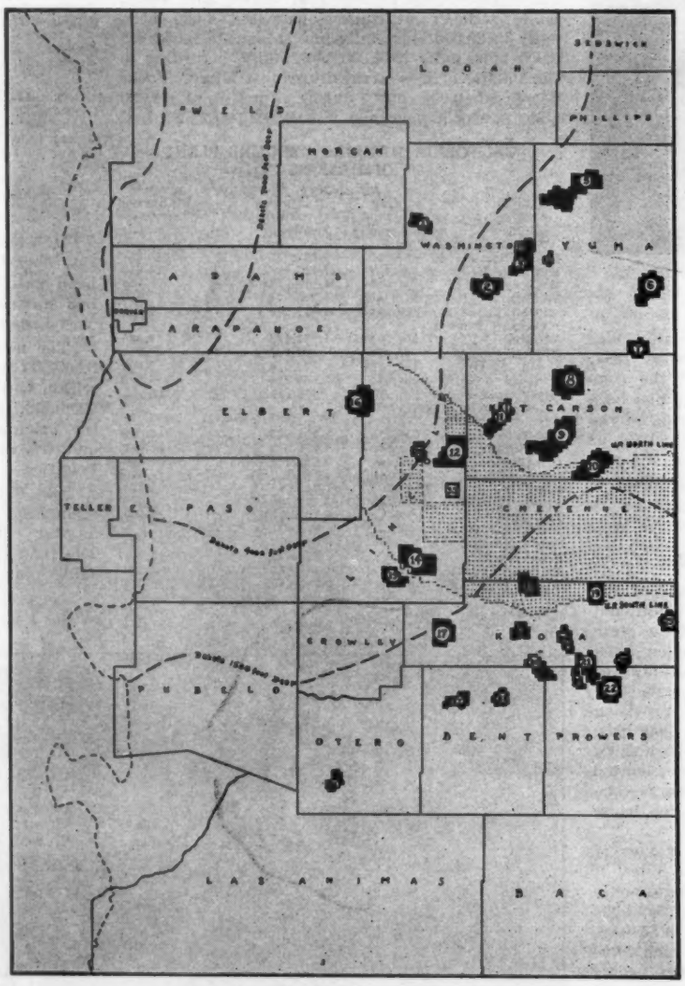
The most recent check shows approximately 3,800,000 acres under lease in eastern Colorado. Of that, approximately 635,000 acres are within 31 separate blocks leased solid and of sufficient size to warrant the drilling of a test on each. Much of the additional acreage is held in rather compact form and ultimately will be converted into drilling blocks, while the remainder is protection acreage checkerboarded over the entire region. In one instance, for example, a major company which has not attempted to block solid, has approximately the equal of two sections in every township in most of the counties. Most of the acreage under lease is fee land. The state has considerable school land throughout the area, but there is practically no federal land.

Location of Blocks

An accompanying map (by Russell H. Volk, general manager of the Plains Exploration Co.), drawn to scale, shows the location of the 31 blocks ready for testing. The key gives the number of the block on the map, its name, the acreage and the company or companies holding the leases. A table also gives the legal description of the blocks and a summary of the ownership and geological work done on them.

Practically all of eastern Colorado north of the Denver-Kansas City line of the Union Pacific Railroad is blanketed with the Tertiary formation and it is next to impossible to map a structure in detail from surface indications. In the light of developments it is extremely doubtful if a single one of the several tests drilled in Weld and Morgan Counties was on a local high. South of the Union Pacific, in the southeastern corner of the state, there are some outcrops which enable structure mapping. The Cottonwood block in Prowers County is an example.

One of the oldest of Colorado's state educational institutions is the Colorado School of Mines at Golden. It was originally organized to train men to aid in the development of the state's mineral resources. The faculty and students were active in studying the possibilities of eastern Colorado. In 1932 they made an extensive magnetometer survey. While it yielded some regional data, it was not satisfactory for determining local highs and the seismograph was looked upon as the most promising solution. Dr. C. A. Heiland, a noted geophysicist of Germany, became a member of the faculty at the School of Mines, but the institution had no instrument or appropriation to obtain one. This situation was met by organizing the Plains Exploration Co. to finance the building of the first instrument under supervision of Doctor Heiland to be jointly owned by the school and the company. In September, 1932, the first reflection survey was made in the Hugo area. Prior to that time, on the magnetometer surveys, the company had turned a few blocks to major companies, including the south Fort Morgan block tested by Indian Territory company. The Plains company was organized with Russell H. Volk as general manager in charge of leasing. Dr. F. M. Van Tyle, professor of geology, directed the field work, and R. H. Johnston was made financial director with Floyd J. Wilson legal counsel.



LEASE BLOCKS IN EASTERN COLORADO

No.	Name	Acreage	Companies—
1	Rago	10,000	Plains
2	DeNova	32,000	I.T.I.O.
3	Hyde	38,000	I.T.I.O.
4	Yuma	4,000	Winegar
5	Eckley	60,000	I.T.I.O.
6	Beecher Is.	27,000	I.T.I.O.
7	Idalia	12,000	I.T.I.O., Texas
8	N. Stratton	42,000	Gypsy, I.T.I.O.
9	S. Stratton	30,000	Gypsy, Texas
10	Smoky Hill	28,000	Carter, Gypsy
11	Flagler	24,000	Winegar, Continental, Gypsy
12	Hugo	32,000	Plains
13	Boyero	8,000	Carter
14	Karval	30,000	Van Arsdale, Winegar (Carter)
15	Forder	18,000	Van Arsdale (Carter)
16	Limon	30,000	Ramsey
17	Arlington	22,000	Ohio, Powerine, Texas
18	N. Fergus	10,000	I.T.I.O., Gypsy
19	Brandon	16,000	Gypsy
20	Big Bend	24,000	I.T.I.O.
21	Chivington	18,000	Gypsy
22	Cottonwood	21,000	Continental
23	Arden	10,000	I.T.I.O., Gypsy, Magnolia, Texas
24	May Valley	9,000	I.T.I.O.
25	N. Fergus	20,000	I.T.I.O.
26	Nee-No-She	11,000	Morgan-Flynn-Henry & Cobb
27	Melina Blk.	8,000	Carter, Texas
28	Timpas	10,000	Carter
29	Towner	13,000	Rennie, Texas, Continental
30	Clifford	10,000	Carter
31	Besthurst	9,000	Carter, Texas, Magnolia

Seismograph Surveys

The inauguration of the seismograph surveys properly marked the beginning of the third epoch in the eastern Colorado play. The flood of excess crude was being brought under control and the major companies began paying attention to the necessity for providing for future reserves. No longer were the Rocky Mountain companies left to play a lone hand. Mid-Continent, Texas and California companies turned their attention to the region, sent in their men for reconnaisance surveys, had them followed by shooting crews and then by their lease men. Not only eastern Colorado, but western Colorado, western Kansas and Nebraska and Wyoming, came in for concentrated consideration. Eastern Colorado, however, was the first region to practically complete its surveys and leasing and pave the way for the drill.

Last year (1935) was the most active geophysical year in Colorado's history. A tabulation made by John H. Wilson's Colorado Geophysical Corp. shows that in 1934 a total of 29.75 crew months of work was done, and in 1935 this increased to 69.4 crew months, with 1936 estimated at 50. No torsion balance work was reported in 1935. Nearly all of the seismograph work done in 1935 was by the reflection method, although one crew employed refraction methods part of the time. The climate of the area favors in the summer so it is not surprising to see two crew months of seismograph work in January, 10.3 crew months in July and 5 crew months for December. Of the total of 69.4 crew months of seismo-

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Sprockets Machine Cut with Hardened Driving Surfaces.

Rotary Drive from the Drum Shaft.

Heavy Duty Self Aligning Roller Bearings on Shafts.

High Speed Drum Shaft and Rotary Drive Sprockets Mounted on Roller Bearings.

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Optional Core Bit Drive Sprocket on Line Shaft.

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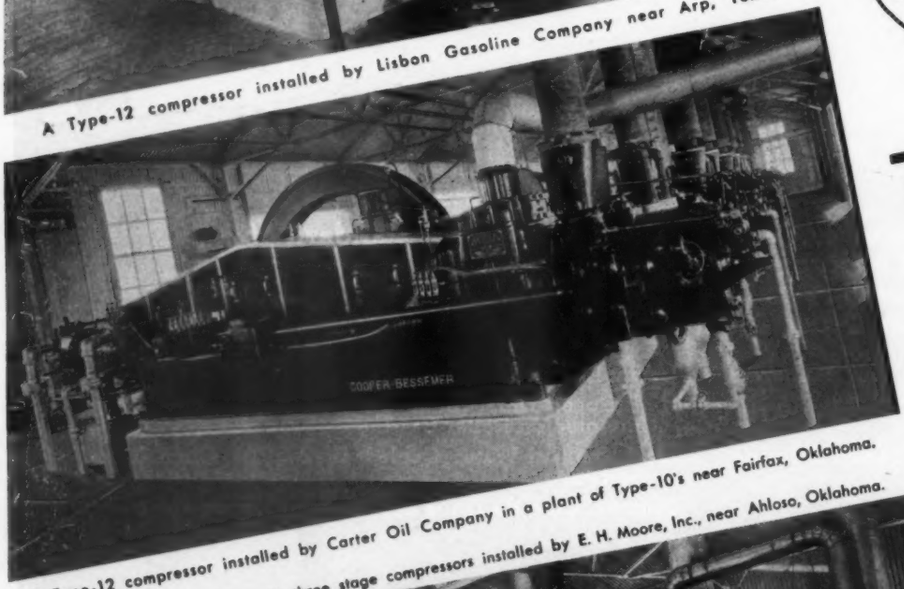
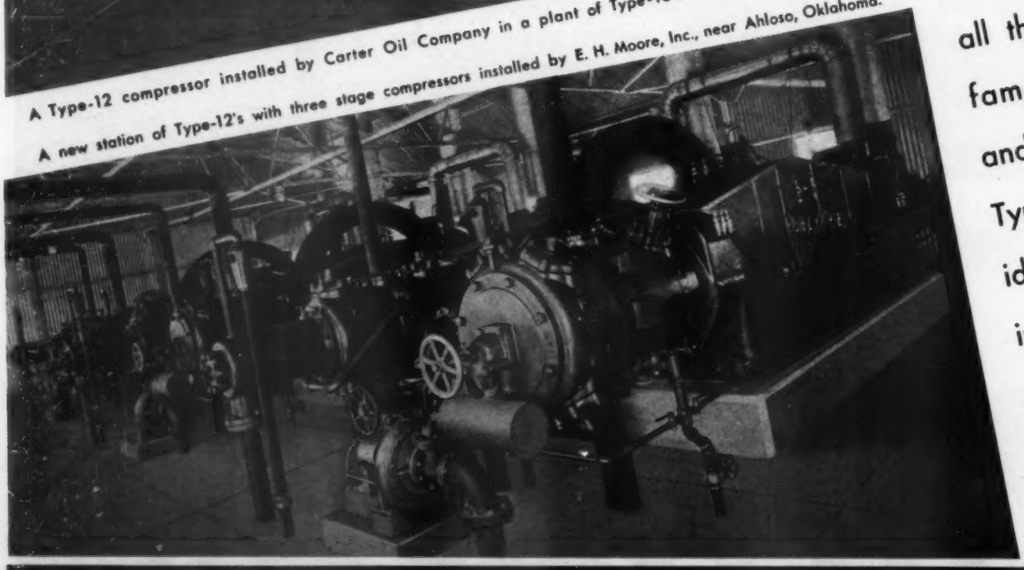
OVERHEARD in a Gasoline Plant

A Type-12 compressor installed by Lisbon Gasoline Company near Arp, Texas.



A Type-12 compressor installed by Carter Oil Company in a plant of Type-10's near Fairfax, Oklahoma.



A new station of Type-12's with three stage compressors installed by E. H. Moore, Inc., near Ahloso, Oklahoma.

THESE are the very words an operator used to express what he thought of the new Type-12 compressor unit. All we can add is it should be a good compressor because it combines all the best features of the famous Bessemer Type-10 and equally famous Cooper Type-80 plus all the new ideas we have accumulated in years of specialization in this field.

THE COOPER-BESSEMER CORPORATION

Mt. Vernon, Ohio — PLANTS — Grove City, Pennsylvania

25 West 43rd St., New York City
Mills Bldg., Washington, D.C.
640 East 61st St., Los Angeles, Calif.
201 E. 1st St., Tulsa, Oklahoma
631 Spring St., Shreveport, La.
Magnolia Bldg., Dallas, Texas
Esperson Bldg., Houston, Texas

L. W. Rogers, 6 Finsbury Square, London, E. C. 2

graph work done during 1935, 43.4 were by company operated crews and 26 by contract crews.

The leasing of 3,800,000 acres, of which 636,000 acres are included in 31 drilling blocks, is the best answer as to the results of these surveys. The work was very thorough. The Cottonwood block was surveyed four times. Out of the work comes a more definite conception of eastern Colorado. The highs are described as more of the plains type of structure, like Kansas, than the mountain type with their steep dips. The eastern Colorado structures have dips of from 1 to 2 degrees with maximum closure of 150 to 200 feet.

The Dakota sands in the lower Cretaceous are no longer the single objective. Instead, the sands in the Pennsylvanian and Mississippian are to be explored. The Indian Territory test on the Hyde block in Washington County, expects to go to the Arbuckle sand at approximately 7,800 feet.

Five Important Tests

At least five tests expected to disclose definitely whether the region is to justify the lease play will be drilled this year. This number may be doubled before the summer is gone. Continental Oil Co. is drilling No. 1 State Bank of Trenton, C SW NE section 21-8n-59, near Buckingham, in Weld County. While this is in the district of the Fort Morgan high (?), it is being drilled on a seismograph survey rather than surface geology. Indian Territory Illuminating Oil Co. No. 1 Vorce, C NE NE section 28-1s-49, on the Hyde block, in Washington County, is about ready to spud. Its No. 1 Strangways, C NW SW section 21-2s-43, Beecher Island block, Yuma County, is drilling. H. V. Elwell No. 1 Federal Land Bank, C SE SW section 20-9s-50, on the Flagler block in Kit Carson County, is due to begin within the next month or two. The Cottonwood block in Prowers County, is expected to be drilled as soon as a resurvey is completed. The location has not been released.

A list of the present known prospective drilling blocks and brief information on them follows. The location of these blocks may be identified on the accompanying map by their respective numbers.

Washington County

1. Rago Block. Located in Townships 2 and 3n, Ranges 52 and 53w. Plains Exploration Co. has 10,000 acres under lease which have not yet been recorded. Magnetic high of 400 gammas closure with indicated surface structure. Area is being surveyed by Heiland Research Corp. for Plains Petroleum Co., with seismograph.

2. De Nova Block. Located in Townships 2 and 3s, Ranges 50 and 51w. I.T.I.O. has a nearly solid block of 26,000 acres with the Texas, Plains, Kincade and others owning edge leases and a few leases within the block. There are no indications of a magnetic high and surface is covered with Tertiary. Area thoroughly surveyed with seismograph by I.T.I.O. and, judging from size of block subsequently taken, a large structure was apparently discovered.

3. Hyde Block. Located in Township 1s, Range 49w. I.T.I.O. has a solid block of 10,000 acres under lease with a few edge leases held by Texas and Plains. There are no indications of a magnetic high and surface is covered with Tertiary. Area shot by I.T.I.O., and they apparently discovered another structure along the same regional high on which the De Nova block is located a short distance southwest.

Yuma County

4. South Yuma Block. Located in Township 1s, Range 48w. Frank W. Winegar has 4,000 acres under lease. Magnetic high of 400 Gammas Closure, but surface covered with Tertiary. General seismic surveys have been made in the area by both the I.T.I.O. and Carter. Except for the magnetic high the basis of information on which this block was taken is unknown. It does not appear to be Carter acreage.

5. Eckley Block. Located in Townships 2 and 3n, Ranges 45, 46 and 47w. I.T.I.O. has 60,000 acres under lease. Texas Co. has a number of leases on the edge and a few within the block. Area shot by I.T.I.O. who apparently discovered another sizeable structure on the same trend as the De Nova and Hyde blocks.

6. Beecher Island Block. Located in Township 3s, Range 43w. I.T.I.O. has solid block of 23,000 acres except for one 80-acre lease in the center held by Continental Oil Co. There is a definite surface structure and same is checked by the correlation of logs of the wells that have been drilled. This block shot in detail by I.T.I.O. It appears they found a large structure existing in the Paleozoics. A number of wells have been drilled in this area in the past, some of which encountered as much as 3,000,000 feet of gas a day; however, they did not possess sustaining pressure and for that reason were noncommercial wells. The I.T.I.O. will probably start the drilling of a deep test well on this block within the next 60 days.

7. Idalia Block. Located in Township 5s, Ranges 43 and 44w. The I.T.I.O. has 12,000 acres under lease with the Texas Co. owning a large number of edge leases completely surrounding the that reason were noncommercial wells.

Kit Carson County

8. North Stratton Block. Located in Townships 6, 7 and 8s, Ranges 46 and 47w. There are over 40,000 acres leased in this block. The Gypsy owns the greater part of the block with the I.T.I.O. holding large center leases; the Plains also owns two important center leases. The Texas, Continental, Magnolia, Stanolind, Winegar and others are represented in the block. The surface is covered with Tertiary; however one of the largest magnetic highs in Eastern Colorado underlies this area. A detail seismic survey was made of the area by the I.T.I.O. and, judging from their subsequent actions, one of the most important structures in Eastern Colorado was apparently found. Development of the block will depend upon the joint action of the I.T.I.O. and the Gypsy.

9. South Stratton Block. Located in Townships 9 and 10s, Ranges 46, 47 and 48w. The Gypsy owns nearly a solid block of 30,000 acres with the Ohio, Texas, Magnolia, Stanolind and others holding edge leases. A large magnetic high underlies the block; surface is covered with Tertiary. The I.T.I.O. made a general seismic survey of the area; they did not give any indication by subsequent action of having uncovered a structure in the area, however, it should be understood the Gypsy already held nearly all the available acreage and if the I.T.I.O. did discover a structure it would have been impossible for them to secure the leases. It will be necessary for the Gypsy to shoot the area before any indication of its value will be known.

10. Smokey Hill Block. Located in Townships 10 and 11s, Ranges 45 and 46w. There are 15,000 acres under lease to Carter Oil Co., with Gypsy and I.T.I.O. holding important leases within the block. Texas, Continental, Plains, Magnolia and others are represented in the block. A general seismic survey of the area was first made by the I.T.I.O. who apparently missed the structure. The Carter subsequently shot the area and their actions left no doubt that they had discovered a first-class structure. As the southern part of the block falls within the range of the Gypsy's U.P. acreage, early testing of this block would not be surprising. The Gypsy's position in meeting the development requirements under their U.P. contract is such as to prompt the surmise they would welcome an opportunity to join with the Carter on a well on this block.

11. Flagler Block. Located in Townships 8 and 9s, Range 50w, Winegar owns 16,000 acres of leases which cover the lower two-thirds of the block. The upper third of the block is held by Continental and Gypsy. The Texas, Magnolia and Plains are also represented in the block. The upper part of the Pierre Shales is exposed and has been mapped by the Continental. Seismic surveys of the area have been made by both the Continental and Colorado Geophysical Corp. Winegar acreage was taken subsequent to Colorado Geophysical Corp.'s survey. This block is now under contract to H. V. Elwell of Wichita, Kans., for the drilling of an 8,000-foot deep test well on the Federal Land Bank tract in the C SE SW section 20, Township 9s, Range 50w. Location for this well has been announced, and it is understood from reliable sources the capital has been secured necessary for the financing of the well. Mr. Elwell's contract calls for drilling operations to be commenced on or before August 15, 1936.

Lincoln County

12. Hugo Block. Located in Townships 10 and 11s, Ranges 52 and 53w. Plains Exploration Co. has a nearly solid block of 32,000 acres under lease and U.P. agreements. The upper part of the Pierre Shales is exposed on the surface and same has been mapped in detail by Plains; a large magnetic high lies several miles to the northwest of the block. An extensive torsion balance survey of the area was made several years ago, however, results were too complicated for corrected interpretation. Area shot by Continental on upper formations but necessitates the shooting by continuous profile on the lower beds before structural value of the area can be determined. This survey will be made by the Heiland Research Corp. for Plains Petroleum Co. within the next 30 days.

13. Boyero Block. Located in Township 12s, Range 52w. Beeler (Carter) has 8,000 acres in a solid block except for one 320-acre center lease held by Texas. Upper Pierre Shales Exposed on surface. Area shot by Carter.

14. Karval Block. Located in Townships 15 and 16s, Ranges 53, 54 and 55w. Winegar and Van Arsdale have 30,000 acres under lease which can be considered Carter acreage. Recently a number of the Van Arsdale leases were assigned to the Gypsy. However, as the Carter is the only

PRINCIPAL TEST WELLS DRILLED IN EASTERN COLORADO IN THE PERIOD 1924 TO 1935

County—	Date	Company—	Well No.—	Location	Remarks—
Arapahoe	1928-33	McDeb Drilling Co.	No. 1 Fitzsimmons	7- 4s-66	Abandoned at 6,110 feet, in Hygiene; show of oil.
Baca	1928	Marland Oil Co.	No. 1 Mesa	8-30s-50	Abandoned at 2,085 feet, in Dolomite.
Baca	1930-31	Jones Oil & Op. Co.	No. 1 Boice Cattle	22-34s-42	Abandoned at 4,965 feet, top Mississippian, 4,830 feet.
Baca	1928	Marland Oil Co.	No. 1 Pipe Springs	27-27s-49	Abandoned 6,048 feet, went through Mississippian and Ordovician.
Cheyenne	1924-26	Standard Oil Co. of California	No. 1 Scholtz-U. P.	19-16s-48	Abandoned at 5,060 feet, water in Dakota at 1,190-1,270 feet.
Crowley	1926	Midwest Refining Co.	No. 1 Walker Hill	32-17s-57	Abandoned at 1,850 feet, top Dakota 2,800 feet.
Elbert	1935	C. E. Lambert	No. 1 Union Pacific	13- 8s-57	Abandoned at 6,004 feet, in top of Morrison.
El Paso	1927	Phillips Petroleum Co.	No. 1 Niles	27-16s-65	Abandoned at 3,570 feet, top Morrison 2,884 feet.
Kiowa	1926	Nee-No-Shee Co.	No. 1 Eads	18-20s-46	Abandoned at 4,090 feet, in Pennsylvanian.
Kit Carson	1918-20	H. A. Rispin	No. 1 Flagler	3- 9s-51	Abandoned at 3,932 feet, 100 feet in Morrison.
Las Animas	1933	Continental Oil Co.	No. 1 Maxwell	29-34s-68	Abandoned at 1,360 feet, in Dakota.
Las Animas	1926-27	Foley & Goldsworthy	No. 1 Government	11-30s-60	Abandoned at 2,010 feet, in red beds.
Las Animas	1927	Parker Club	No. 1 Adams	32-34s-56	Abandoned at 3,873 feet, in granite.
Las Animas	1927-28	Phillips Petroleum Co.	No. 1 Haskins	23-29s-56	Abandoned at 2,575 feet, Dakota eroded.
Lincoln	1928	Eastern Colorado Oil Co.	No. 1 State	36-14s-57	Total depth 3,465 feet, in Dakota; show of oil.
Logan	1926-27	Northeastern Colorado Oil Co.	No. 1 State	36- 8n-55	Abandoned at 5,612 feet, through Lakota; show of oil in Lakota.
Morgan	1930	Indian Ter. Illuminating Oil Co.	No. 1 State	16- 1n-57	Abandoned at 5,905 feet, through Lakota.
Morgan	1931	Prairie Oil & Gas Co.	No. 1 Mortier	2- 5n-60	Abandoned at 6,588 feet, in Dakota.
Morgan	1931	Colorado Associated	No. 1 Pumphrey	14- 4n-58	Abandoned at 6,176 feet, through Lakota.
Prowers	1933	Trojan Oil & Gas Co.	No. 1 Lotus Oil	15-23s-46	Abandoned at 5,913 feet, in Mississippian; shows of oil and gas.
Prowers	1924	Lamar Oil Co.	No. 1 Johnson	30-27s-45	Abandoned at 5,026 feet, on fold around plug.
Weld	1932	Ramsey Petroleum Co.	No. 1 St. Anthony	15- 7n-59	6,000,000 ft. gas in Muddy at 6,680-6,700 ft.; show oil in top Dakota.
Weld	1926-30	Platte Valley Petroleum Co.	No. 1 Patterson	24- 6n-61	Muddy sand at 6,657 feet (T.D.); discovery well; I.P., 565 bbls.
Weld	1932	Continental Oil Co.	No. 1 Anthes	24- 3n-59	Abandoned at 6,658 feet in Dakota.
Weld	1931	Prairie Oil & Gas Co.	No. 1 O'Toole	33- 7n-62	Abandoned at 7,272 feet, probably top Dakota.
Weld	1933	Ramsey Petroleum Corp.	No. 1 Scriven	22- 7n-59	Abandoned at 6,894 feet, in Dakota.
Yuma	1924	Continental Oil Co.	No. 1 State	28- 2s-43	Abandoned at 2,885 feet, in Morrison.
Yuma	1929	Phillips Petroleum Co.	No. 1 Andrews	3- 2s-42	Abandoned at 5,130 feet, in Mississippian.

Bonus or penalty?

68−63=5 and 5 is the octane bonus awarded to motorists when the Western Petroleum Refiners fixed the minimum octane rating for regular grade gasoline at 68 instead of 63

Who will pay the bonus?

Skimming plant refiners cant pay it

Refiners with near-cracking units cant pay it

And refiners who cant pay the bonus with 68 octane gasoline (at least) will have to pay a penalty instead—a penalty in lost gallonage, in cut prices, in vanished profits

That's where Dubbs refiners cash in

Dubbscracked gasoline always gives customers an octane bonus and a mileage bonus as well—and the Dubbs refiner gets a profit bonus

No matter what the official specifications, there is never enough Dubbscracked gasoline to go round

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

company to have made a seismic survey of the area and as the area falls within the U.P. tax equity lands of the Gypsy, it is suspected the Gypsy and Carter are working together on the block.

15. Forder Block. Located in Townships 15 and 16s, Ranges 54 and 55w. Van Arsdale has 16,000 acres under lease. This is believed to be Carter acreage for the reason the Carter is the only company having made a seismic survey of the area.

Elbert County

16. Limon Block. Located in Townships 7 and 8s, Range 57w, Elbert County, and Townships 7 and 8s, Range 56w, Lincoln County. Ramsey has over 30,000 acres in leases and U.P. agreements. Deep test well drilled on section 13, Township 8s, Range 57w, which encountered Muddy sand at a depth of 5,351 feet and Dakota at 5,423 feet. Surface elevation at well 5,699 feet. Muddy sand dry with indications of discoloration in the upper part; Dakota sand carried water.

Kiowa County

17. Arlington Block. Located in Townships 18, 19 and 20s, Ranges 52 and 53w. The block consists of 22,000 acres of leases with the Ohio Oil Co. owning most of the acreage. The Powerine and Texas own a number of well-located leases and the Magnolia and California are also represented in the block. Magnetic high of 800 gammas closure underlies the area and there is definite evidence of surface structure. Seismic survey of the area made by the Ohio Oil Co.

18. South Fergus Block. Located in Township 19s, Range 49w. There are over 10,000 acres leased in this block with the I.T.I.O. owning nearly all of the center acreage. The Gypsy and Magnolia own well-located leases in the block and edge leases are held by Texas and Ohio. This is a core-drilled block of the I.T.I.O.

19. Brandon block. Located in Township 17s, Range 45w. Gypsy has 16,000 acres in leases and U.P. lands on the block with the Continental owning a 320-acre center lease and the Texas a 160-acre center lease. Area shot by Gypsy.

Prowers County

20. Big Bend Block. Located in Township 20s, Ranges 48 and 49w, Kiowa County, and Township 21s, Ranges 47 and 48w, Prowers County. I.T.I.O. has 24,000 acres under lease with the California, Texas and Gypsy represented in the block. Definite evidence of surface structure. Area core-drilled by I.T.I.O.

21. Chivington Block. Located in Township 20s, Ranges 45 and 46w, Kiowa County, and Township 21s, Ranges 45 and 46w, Prowers County, Gypsy has 18,000 acres under lease with Texas and Magnolia represented in the block. There are indications of surface structure, but no further information on the Gypsy's reasons for securing this block is known.

22. Cottonwood Block. Located in Townships 21 and 22s, Ranges 44 and 45w. Continental has a nearly solid block of 18,000 acres with Texas, Magnolia, California, Gypsy and I.T.I.O. represented with leases. Definite surface structure and detailed seismic survey made by Continental. I.T.I.O. core drilled the area. A deep test well is almost certain to be started on this block within the near future.

Kiowa County

23. Arden Block. Located in Townships 20 and 21s, Ranges 44 and 45w. Approximately 10,000 acres under lease in the block with the I.T.I.O. holding nearly all the acreage. Texas, Magnolia, and Gypsy represented with leases on the block. Surface structure and block core-drilled by the I.T.I.O.

24. May Valley Block. Located in Township 21s, Range 46w, 9,000 acres under lease, with the I.T.I.O. holding nearly all of the leases. Gypsy, Stanolind, Texas, and Plains also represented in the block. The block taken on the basis of surface structure and core-drilled by the I.T.I.O.

25. North Fergus Block. Located in Townships 16 and 17s, Ranges 48 and 49w. Approximately 20,000 acres in the block, with the I.T.I.O. holding most of the leases on the even numbered sections. Block falls in the range of the Gypsy's U. P. acreage, and therefore, Gypsy holds all odd numbered sections. Texas holds a number of well-located leases and Continental and Ohio also are represented. Area core-drilled by I.T.I.O. and block taken on the basis of this information.

26. Nee-No-She Block. Located in Townships 19 and 20s, Ranges 46 and 47w. Approximately 11,000 acres in the block, of which 8,000 is held jointly by Morgan-Flynn-Henry & Cobb of Tulsa. The rest of the acreage held by Texas, Gypsy, Continental, I.T.I.O. and Ohio. Concerted efforts have been made to drill a deep test well on this block and some progress has been made towards this end.

Bent County

27. Melina Block. Located in Township 22s, Range 52w. Carter has block of approximately 8,000 acres with Texas holding several leases within the block. The block was taken on the basis of surface structure.

Otero County

28. Timpas Block. Located in Townships 26 and 27s, Ranges 57 and 58w. Carter holds block of approximately 10,000 acres in this area, assembled on the basis of the known surface structure present.

Kiowa County

29. Towner Block. Located in Townships 18 and 19s, Ranges 41 and 42w. Block of approximately 13,000 acres assembled by Waldo Rennie, with Texas and Continental holding some acreage in and around the blocks. Surface structure mapped by Mr. Rennie and area shot in detail by Stanolind. This is undoubtedly a Stanolind block, taken on the basis of their detailed seismic work in the area.

Lincoln County

30. Clifford Block. Located in Townships 10 and 11s, Ranges 53 and 54w. Carter has solid block of 10,000 acres under lease. This block was assembled in 1934 for Carter by E. N. Duffield and Charles H. Beeler. Block undoubtedly taken on the basis of surface geology which indicates south reversal through this area. Area shot by Carter only from a regional standpoint with determinations at 2-mile intervals.

Bent County

31. Beethurst Block. Located in Townships 21 and 22s, Range 50w. Carter owns block of approximately 9,000 acres, taken on the basis of surface geology. Texas and Magnolia represented in the area.

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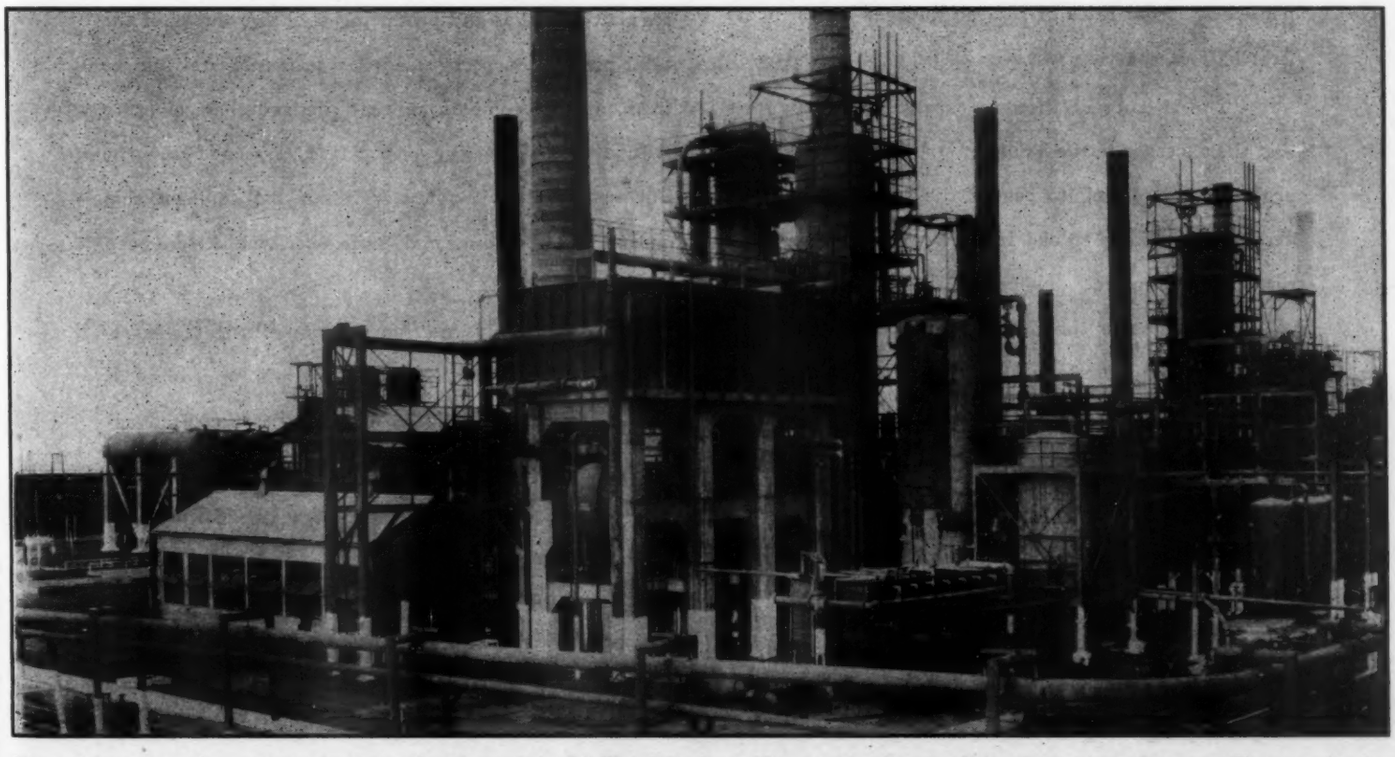
NEW POLYMERIZATION UNITS AT PHILLIPS REFINERY



Two of the new polymerization units at the plant of the Phillips Petroleum Company at Borger, Texas, seen from the rear. These two units have a combined capacity of 2,000 barrels of thermal process polymer gasoline per day

the OIL AND GAS JOURNAL

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Surprising Showing

Gasoline consumption continues to exceed all expectations. In fact, the increase in demand is so great that it is very materially reducing the menace of 10,000,000 barrels of excess gasoline in storage.

A surplus of that size when demand was gaining only three or four per cent was a much more serious matter than it can be now when demand indicates an increase of ten per cent. Particularly when accompanied by larger sales of fuel oil and gas oil as in the first half of the year.

The absence of distress gasoline sales suggests that the excess is in the hands of strong companies who probably are coming to regard the surplus as almost necessary working stocks in view of the unexpected rise in consumption.

At the same time reports on crude production are taking on a more hopeful aspect. The skeptics who tried to ridicule the Interstate Compact with cynical disbelief in any possibility that the states would not fall out over production allocations are having a demonstration that common sense can triumph over selfish interest.

The states within the compact (among the largest producers, too,) have shown their good faith in the compact by agreeing to reduce their production even below the Bureau of Mines recommendation in the height of the consuming season. They have subordinated themselves to the greater good of the industry in which they all share.

Passing three million barrels daily production with crude stocks where they are was so much beyond any conceivable demand that it called for correction if prices were to be maintained during the summer.

The states within the compact having effective regulatory bodies and producing over two-thirds of the total production recognized it was immediately up to them, and by common consent pledged themselves to reduce their respective output five per cent below the Bureau of Mines figures. Without the compact this mutual understanding and confidence would have been impractical.

This effective voluntary action illustrates exactly the purpose of the compact. There is no attempt at coercion, no effort to force something to the disadvantage of others. A compact of that sort could not last. It can succeed only when based upon clearly demonstrable principles of benefit to all.

Continuance of the present program is needed, not only to stabilize the industry, but to convince the oil producing states outside the compact that they should welcome the invitation to enter it to be extended at the next meeting of the commission in Dallas.

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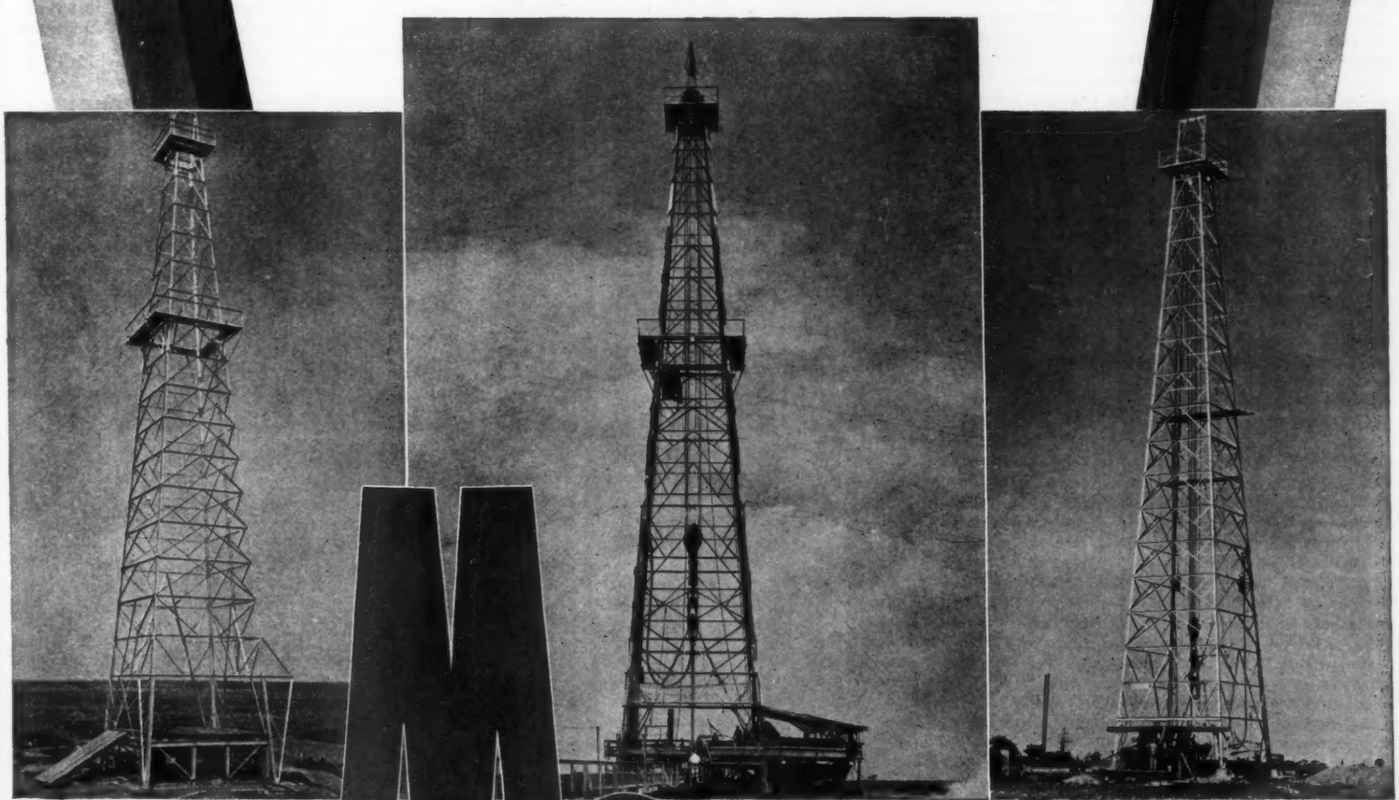


DERRICKS
PUMPING EQUIPMENT
Moore

Oil News from Foreign Lands

Labor Difficulties Abroad

Labor difficulties which have seriously disturbed oil operations in foreign countries since the first of the month and for longer periods in some fields are believed to be approaching settlements which will permit the return of normal operations. As the week closed it was thought that within a few days several refineries in France which have been shut down would resume operations, and it was hoped that strikes affecting important fields in Venezuela would be settled. In Mexico there were indications that the four-month strike which has shut down the field operations of the Huasteca Petroleum Co. was approaching an end.

The oil companies concerned are hopeful that the strike settlements will be of a permanent nature. Most of the labor troubles with which foreign oil operators have been confronted over the past year have a political background rather than dissatisfaction on the part of the great majority of oil company employes. It is said that government officials now appear more willing to adjust differences so that oil revenue is not lost.

Other observors are not so sure that permanent peace is assured in oil operations of several countries. They feel that the underlying political unrest which is responsible for the labor troubles have not been ended, and they look for more trouble later in the year. They also point to the fact that settlements between employers and employes have generally been arrived at by the former acceding to practically all the demands of the latter and this method of ending strikes cannot continue indefinitely. It is also pointed out that concessions granted have already greatly increased the costs of foreign operations, a trend which if continued, will result in a contraction of oil operations in certain foreign countries. Some of these operations, particularly in the refining end, have never been profitable. The obvious net result of such a condition is to increase the attractiveness of operations in United States for American companies.

The causes of the recent strikes in France which have shut down plants having more than half of the refining capacity are said to be entirely political. In the latest shift of governmental control labor groups were promised new laws, affecting their employment. General strikes started without regard to employment conditions in individual industries when this legislation was not passed as quickly as had been hoped for. Reports here indicated that under the direction of Premier Leon Blum this legislation would be passed within a few days. These labor laws which apply to all the major industries when they become effective will assure 40 hour weeks, minimum wages, vacations on pay and recognition of organizations of employes.

The increased cost of refinery operations may result in the shutting down some of the 17 refineries in France. It is no secret that the operation of refineries in France built as a result of a government program to force the construction of a domestic refining industry, has not been generally profitable. Smaller plants without regular crude supplies and assured outlets have been at a disadvantage and in four cases at least were not operated continuously previous to the demands of labor for higher wages, shorter hours and other changes in working conditions.

Labor troubles started in Venezuela with the death of President Gomez following a long reign as dictator. Since that time there have been intermittent periods of peace and turmoil affecting the field operations of all operators. The strikes have been largely confined to Lake Maracaibo region but last week they spread to Eastern Venezuela and the Quiriquire field of the Standard Oil Co. of Venezuela (Creole) was shut down for a few days. This field has a crude oil production of approximately 50,000 bbls. daily. Operations in the Cumarebo field were also shut down for a time with scattered trouble reported in the lake fields. The present total production of Venezuela is slightly in excess of 400,000 bbls. daily.

It has been apparent in recent weeks that the government needed additional authority to cope with activities of agitators and this authority is now being granted by the legislature in what is known as the Public Order Act. Under this act the president will have the authority to deport foreigners guilty of inciting political and labor revolts and otherwise maintain order in settling any disputes that arise between employers and employes.

Some concern has been expressed regarding a new labor law that has been introduced in the legislature. The original act which was introduced by factions unfriendly to the present administration was patterned after the law which has been the source of trouble in Mexico. This was later withdrawn and an administration bill was introduced with less objectionable provisions. This has since been amended to include some of the provisions of the first bill. It is not believed that this bill will be finally passed during this session of the legislature which ends July 5.

Statements made by President Contreras this week indicate that he and other government officials recognize the necessity of not permitting labor leaders to have a free hand in calling and directing strikes. In this connection there has been a great deal of misinformation spread among Venezuelans in regard to oil company operations by agitators. They have been lead to believe that the country derived little or no revenue from these operations. The truth of this situation is being made known to the natives. For several years the bulk of the government revenues have come from the royalties collected from all production and this fact accounts for the government's strong financial position.

Egypt Becomes Important

EGYPT

The Egyptian oil industry takes on greater importance at the present time, in view of the nearness of the country to Ethiopia and the Suez Canal, the military operations in Ethiopia and the concentration of the British fleet in Alexandria harbor. The production of crude oil is controlled principally by Anglo-Egyptian Oilfields, Ltd., Royal Dutch-Shell subsidiary. The company in 1935 produced approximately 1,215,606 bbls. of crude, compared with 2,479,037 bbls. in 1934, a decrease of 263,431 bbls. Two new wells completed during the year were disappointments. The first, to test a possible extension of the northern part of the field, did not yield commercial production, while the second, drilled on the eastern anticline, proved dry and was abandoned. The drilling of three other wells was commenced.

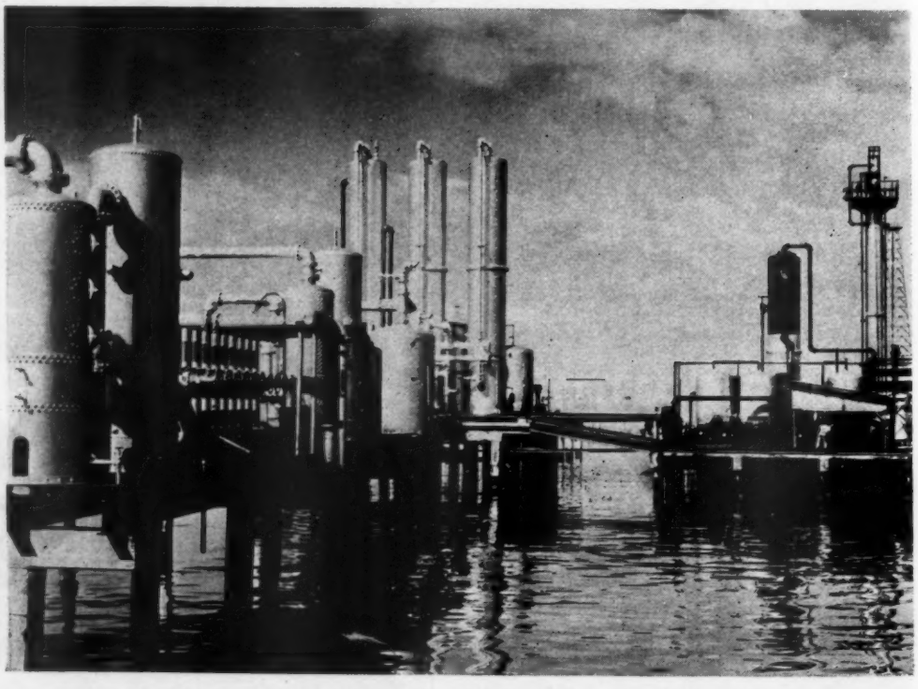
Negotiations for the grant of an exploration concession in new territory were continued, but the terms of the standard regulations under which licenses and leases will be granted have not yet been finally decided by the Egyptian government.

Anglo-Egyptian Oilfields operates an oil refinery at Suez, which ran approximately 2,264,591 bbls. of crude in 1935, a daily average of 6,204 bbls. Of this 1,175,433 bbls. consisted of Egyptian crude while the remaining 1,089,158 bbls. were imported. The dehydrating plant and the benzine recovery plant were both in operation throughout the year and gave satisfactory results. The quantity of natural gas available for treatment showed a decline. A pressure distillate stabilizer was completed and put into service early in 1935, while plans were prepared for the erection of a modern high vacuum asphalt plant, which is expected to go into operation in the near future.

Solvent Refining in Germany

GERMANY

The solvent refining and the solvent dewaxing plants of Deutsche Vacuum Oel Aktiengesell-Schaft (Socony-Vacuum) at the company's Bremen, Germany, plants have been completed and are now in operation. These plants were designed to operate with crude oil produced in Germany. The output of the plants will supply the company's large lubricating oil business in Germany. Refining subsidiaries of the Socony-Vacuum company are also building solvent plants in France and Italy. The former will be completed in August and the latter early next year.



Gasoline recovery and repressuring plant at Lagunillas, Lake Maracaibo

Good Engineering and Uniform Laws Essentials of True Conservation

By L. G. E. BIGNELL

"The Oklahoma Corporation Commission is ready at any time to cooperate with the oil producers in any field in Oklahoma and issue orders basing the taking of potentials upon other than open flow gauging of wells when the operators agree upon plans satisfactory to them," stated Wm. J. Armstrong, conservation officer for the Oklahoma Corporation Commission. "The operators can derive many benefits when the old policy of taking all they can get is abandoned and a new one based upon producing only as much oil as can be efficiently taken from the field is adopted," continued Mr. Armstrong and as an example of the application of good engineering practices he cited the results thus far secured in Lucien, South Burbank and Keokuk fields in Oklahoma all operated upon the unit plan basis.

Much has been written and said recently about the desire of the oil companies to discontinue old practices of competitive drilling and producing of oil and gas and instead treat the pools as units and produce them only at the most efficient rates and under approved operating conditions. It is admitted by all who know about the present advancement of the engineering and geological profession as applied to oil field conditions, that no field offers problems that cannot be solved by the application of principles tried and proven. No set standard of engineering practice can be laid down for all fields or even for all wells in any pool but it is possible to make use of the many scientific instruments and methods now at hand to secure fundamental data about the producing formations and the gas and oil in place and work out efficient drilling and production methods to be applied to the field.

Oil Companies Cooperating

The state of Oklahoma has been fortunate in having had the cooperation of the oil companies and others interested in the oil lands in this state, and ever since proration was first applied to fields in Oklahoma back in 1915 the operators have gone along and done their full share in cooperating. There are instances, of course, where individuals have been unruly, but Mr. Armstrong stated, on the whole the Corporation Commission has received very satisfactory cooperation both in letter and spirit to all orders issued.

This is largely due to the understanding of oil field problems by enforcement officers and their willingness to allow the operators and interested parties in each field to outline to them their ideas and agree upon the methods best suited to the solving of the field's problems as decided by the majority of those interested. When such an agreement has been reached the Corporation Commission has issued orders making the rules and regulations enforceable and in this way orderly production and higher recoveries have been made possible.

The taking of potentials by open flow methods is not the recommendations of the conservation officer in this state, Mr. Armstrong pointed out, for his department stands ready at any time to authorize the allocation of gas and oil from any field in any other manner prescribed by the majority of operators in the field. At this time the operating company in charge of the development and production of South Burbank is proposing to do away with open flow gauging of wells to establish potentials and plans in the future to divide the allowable for that field among the various wells upon the bottom-hole pressure relationship of each well to the average pressure of the field.

This method is also being considered for future allocation for Fitts field and it has been suggested for other pools in the state. It has been found by the study of data carefully secured during the early productive life of these fields that there is a fixed relationship between the rate of decline of formation pressure and rate of withdrawal of oil from the common source of supply. It is not expected that adjusting well allowables upon the pressure decline curve will be 100 per cent perfect

William J. Armstrong, conservation officer, Oklahoma Corporation Commission

but it is also known that taking open flow gauges of wells to establish potentials has many disadvantages and engineers agree that using the pressure decline curves is much the lesser of the two evils.

This same sentiment regarding field orders was expressed by Theo. A. Morgan, oil umpire for the Public Conservation Commission of Kansas and in that state everything possible is being done to assist the oil men in solving their field problems. If any group of owners of leases in any field decide upon an approved course agreeable to the majority of the interests in the field the Conservation Commission of Kansas will issue orders covering the rules and regulations decided upon and make them legal and enforceable. Mr. Morgan stated that the object of the Kansas regulatory body is to provide means of ratable taking from each of the wells in the individual pools or fields and also to provide equitable allocation of the state's allowable between the fields of the state.

New Mexico has recently enacted an oil and gas conservation law that provided much the same advantages as outlined by the conservation officers in Oklahoma and Kansas, the main difference being that in the New Mexico law these provisions are clearly stated and not made discretionary on the part of the conservation officers.

The Oil State Compact Commission is now making a very detailed study of all state laws and codifying them and it is hoped that all oil and gas producing states will soon join the six states now in the oil state compact group and then enact uniform laws governing the production of natural resources in each state. When this is done the conservation officials in all states can enforce the wishes of the majority of the operators in any pool or field and it will then be up to the operators to adopt good engineering practices to be applied to their fields, treating the fields as units.

This movement on the part of oil men to apply modern engineering to the development and production of gas and oil is not entirely altruistic for the East Texas field has been the greatest laboratory ever opened to the oil industry for the practical demonstration of the benefits to be obtained by regulated production. Many of the oil men of the older school who operated in East Texas are now frank in their admission of conversion to the use of good engineering, not because of the good it does the other fellow but because of the very practical benefits they themselves have derived.

Competition Costly

Competition is always costly and the general public in the last analysis pays the cost. It is realized by the thinking operators that the public must be considered in all of their problems and costs must be reduced and a portion of the saving passed on to the ultimate consumer. This is only good business.

Now that the conditions existing in underground reservoirs of gas and oil are better understood by all interested, it has been recognized that an operator may gain some temporary advantage over his neighbor by the application of different methods for development or production from those used by his neighbor, but it has also been more clearly demonstrated that such apparent benefit resulted later in losses for while man may defeat man in competition it is not possible for man to defy natural laws and not ultimately suffer losses.

One instance of cooperation that has been outstanding was put into effect in the Wellington field in Sumner County, Kansas, by the operators there.

This field was opened in December, 1929, and for some time only had four producing wells. At the beginning of 1936 there were 26 producers in the pool and since then three have been added. The oil is found in a chat formation at a depth of about 3,650 feet and up to January 1, 1936, 783,662 bbls. of oil had been recovered. The wells were all on the pump and the cost of securing this 42 gravity oil was relatively high. It was found by experimenting that running bottom hole chokes on the bottom of the tubing would cause these oil wells to flow naturally and this method of production has now been applied to all wells with the result that the total potential for the 29 wells on June 19 was 44,028 bbls. and their combined allowable 11,487 bbls. for the month. This is true conservation for there has been a reduction in the gas-oil ratio and the wells have been taken off the pump releasing this equipment for use elsewhere if desired.

In the Fitts field, Oklahoma, the operators have recognized the benefits to be derived through coordination of methods of drilling and producing wells. All wells are tubed and potentials taken

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Panorama of South Burbank Community oil field in Osage Nation, Oklahoma

through the tubing and the wells also produced in like manner. Engineers representing the various companies in this field get together frequently for discussion of common problems and meetings are held under the supervision of the conservation officer for the state as desired and the problems fully discussed and methods of procedure agreed upon. When this is done the conservation officer writes an order embodying these recommendations and they are enforceable. This method of operation has resulted in a very low drop in formation pressures and conservation of gas and it is believed will result in higher ultimate recovery from every lease in the field.

From the standpoint of the people of Oklahoma, who the Corporation Commission really represents, the regulation of production from fields in this state is beneficial. A gross production tax upon all oil recovered is payable to the state and any method that will increase ultimate recovery and at the same time make available for current production sufficient oil to meet the state's allowable during each month is beneficial. If oil is left underground through poor application of engineering to the drilling and recovery then the state taxes are decreased and the public shares in this loss of revenue so everyone within the state is interested in the oil business whether it is generally recognized or not.

Uniform Laws Needed

There is urgent need for uniform laws governing the production of gas and oil for without such laws the states are competitive and this means that the old law of capture has been transferred from individual wells and fields to state competition for the consumers market. This again is objectionable for without uniform laws to guide each state and the setting up of similar methods of taking potentials, estimating reserves, and governing rate of production waste will occur and the general public will ultimately suffer.

In many respects the oil business differs from other industries and the natural resources of all states should be regarded as common to the whole nation and for any state to waste either gas or oil or natural energy of the underground reservoirs means that the whole nation is being penalized. To assist in securing uniform laws the Interstate Oil Compact has been formed and the six states now in this compact are urging the other states still operating outside of the compact agreements to join with them in building up this body. The Compact Commission has no direct interest in the maintenance of prices for either crude oil or its products but it is recognized that the uniform application of good engineering practices to all fields in this country will be beneficial, and will automatically result in stabilization of the market and hence result in less price fluctuation and periods of over and under production.

One of the principal objects of the Compact Commission is to create public sentiment in favor of its purposes and to educate the public and the oil operators in the benefits to be derived by all if good modern engineering practices are applied to the recovery of gas and oil from the nation's reserves. If the public is brought to the realization of the benefits that will accrue to it through the enactment of uniform laws and then the correlation of all problems of the industry and the enforcement of the rules and regulations agreed upon by the industry through the police powers in each state it is believed there will be a move to secure these benefits through the oil states compact.

Congress has already approved the compact and the Connally bill interdicting the interstate shipment of oil produced in violation of state laws, which each expire next year, and should be made permanent. State legislatures will meet in 32 of the states early in 1937 and many of the new legislatures elected at the fall election will then go into action for the first time. The people can do much to crystalize this beneficial movement if they will express their wishes to have each of the oil states pass such acts as will permit them to join the oil state compact and be ready to enact new uniform laws as soon as this commission completes work now under way in framing same.

The engineers of the oil industry can do much both as a representative of the industry and as citizens to further this movement. Their close contact with the many problems of the industry places them in a position to act as leaders in these discussions and to aid in the explanation of the needs of uniform laws and a centralized governing body. If the engineering profession has shown the industry the benefits to be derived through the application of modern practice to the recovery of natural resources of the nation it is its duty to aid in making possible the use of these methods, not only by the companies, but through the broad application to state problems which in turn are national matters worthy of the professions best efforts.

It is not assumed that this ideal situation will be arrived at immediately or without effort and perhaps some mistakes will be made but all who are conversant with the progress made in petroleum engineering in recent years realize the urgent need of uniform practices. It gains nothing for one company or individual to take some temporary advantage gained by the application of engineering skill when this advantage is really secured at the expense of natural energy within the common reservoir and will later result in penalties for all operators in the field including the ones who may have had apparent gains at first.

As stated before East Texas field has been beneficial in educating many operators in the advantages of good engineering practices and this knowledge is being disseminated through the whole industry and it is up to the engineer to do his share in the educational work now under way to the end that state police bodies may be empowered to enforce laws designed to give the greatest good to the greatest number because through such practice the public, of which the oil industry is a part, will be the final benefactors.

H. C. Mann to Receive Dudley Medal for Outstanding Work

H. C. Mann, senior materials engineer, ordnance department, U. S. Government, Watertown arsenal, has been chosen as the winner of the Charles B. Dudley Medal for 1936. This medal, which commemorates the name of the first A.S.T.M. president (1902-1909), is awarded to the author of the paper presented at the preceding annual meeting which is of outstanding merit and constitutes an original contribution on research in engineering materials. The medal will be awarded Mr. Mann on July 1 during the 1936 A.S.T.M. annual meeting in Atlantic City.

The winning paper, entitled "The Relation Between the Tension Static and Dynamic Tests," presents data and conclusions from an investigation which led to the discovery of a correlation between static and dynamic tests. This correlation involves consideration of the fact that a material in its initial state possesses a certain amount of inherent internal potential energy which, during the process of deformation, is apparently converted to kinetic energy and manifested as increased elastic strength.

Data are presented regarding this internal energy factor which clearly indicate that the mechansim of the process of deformation and rupture is essentially the same under both static and dynamic conditions. It is also shown that since time is required for energy conversions to take place, the total energy value obtained must be dependent on force, time, and space, and therefore to obtain a complete knowledge of the dynamic properties of materials, the velocity of the force application must be considered.

Mr. Mann, who was educated at Worcester Polytechnic Institute and Boston University, has been at Watertown arsenal since 1916. From 1928 he has been research engineer in charge of the physical testing laboratory and has recently been appointed senior materials engineer.

Merriam to Act With Advisory Aeronautical Committee

Governor Frank F. Merriam of California has joined with a group of the most distinguished aeronautical men in the country to act as an advisory committee for the National Aircraft Production meeting of the Society of Automotive Engineers which will be held at the Ambassador Hotel, Los Angeles, October 15, 16 and 17. Mayor Frank L. Shaw of Los Angeles will also serve on this committee, it is announced by John A. C. Warner, S.A.E. secretary and general manager.

The gathering will be the first ever dealing specifically with aircraft manufacturing problems by any organization and will record the progress of the airplane industry from a preponderance of hand work toward mass production methods. Air transportation and maintenance problems also will be discussed.

Announcement of New Officers of A.S.T.M. for 1936-37

Nominations for offices of the American Society for Testing Materials, for 1936-37 are announced. Official notice of the election will be given at the first session of the A.S.T.M. annual meeting, June 30, in Atlantic City. The new officers are as follow: A. C. Fieldner, chief engineer, U. S. Bureau of Mines, Washington, D. C., president; T. G. Delbridge, the Atlantic Refining Co., vice president; O. U. Cook, Tennessee Coal, Iron & Railroad Co.; H. F. Gonnerman, Portland Cement Co.; C. S. Reeves, the Barrett Co.; F. E. Richart, research professor, the University of Illinois, and F. M. Waring, the Pennsylvania Railroad Co., members of the executive committee with terms of two years.

Mr. Fieldner has been active in developing standard methods and apparatus for analyzing coal, has directed the Bureau of Mines investigations of the ventilation of vehicular tunnels, and has been the author and co-author of many scientific and technical papers. He is chairman of the A.S.T.M. committee D-5 on coal and coke, committee D-3 on gaseous fuels and of the sectional committee on classification of coals.

Doctor Delbridge has contributed especially to developments in distillation methods, solvent refining, wax manufacturing and methods of testing. He has been vice chairman on committee D-2 on petroleum products and lubricants since 1930.

Modern CRACKING Process

By GUSTAV EGLOFF and EDWIN F. NELSON
Research Laboratories, Universal Oil Products Co.

The cracking process for the production of gasoline is the dominating force in the conservation of crude oil. Not only does it affect conservation but is also a primary factor affecting the economics in the automotive, airplane, gas and coal industries. It plays a large part in organic chemicals, such as solvents and antioxidants, in ceramics, insulating material, instruments, alloy steel, and heavy steel industries.

In the early days of the automobile industry, indications were that the capacity of the petroleum industry to supply the necessary gasoline would be inadequate. The impending need for gasoline was a threat which spurred on the chemists, chemical engineers, and other technical men to provide means for producing more gasoline from crude oil. The cracking process provided the means for meeting the ever-increasing demand for motor fuel of improved quality.

TABLE 1—ANALYSIS OF EAST TEXAS CRUDE

A.P.I. gravity	39.0
Sulfur, per cent	0.28
	°F.
Initial boiling point	108
Per cent distilled over:	
10	212
20	275
30	360
40	447
50	537
60	635
Per cent at 300° F.	23.0
Per cent at 400° F.	35.0

Cracked gasoline was produced in the United States commercially about 23 years ago. It was looked upon as being distinctly inferior in quality to that present in crude oil. In 1913 refiners were finding it difficult to increase the yield of gasoline from crude oil by atmospheric distillation and looked upon cracking as a necessary evil.

However, long before 1936 it was discovered that cracked gasoline was a superior product to that derived by ordinary distillation, since it had properties of a nondetonating character which were absent in nature's gasoline. Hence, it was necessary to crack even the gasoline which nature has produced into hydrocarbons which will burn slowly in an automotive engine and thereby give nondetonating properties.

So great was the demand in the United States for antiknock gasoline that one-fourth of the 217,560,000 bbls. (42 gallons) of straightrun gasoline produced in 1935 was cracked or reformed into high-octane gasoline. In addition, 205,920,000 bbls. of cracked gasoline were produced in the United States from a great variety of cracking stocks, ranging from naphtha, kerosene, and gas oil, to fuel oil residue and crude oil itself. It is significant to note that in 1912, which was before the

Here the author offers a complete description of modern cracking, reforming, polymerization, etc., as part of a paper presented before the Chemical Engineering Congress, World Power Congress, London. The remainder of the treatise will be published in subsequent issues.

advent of commercial cracking, the yield of gasoline from the normal distillation of crude oil was 12 per cent, whereas in 1935 the percentage was 45.

In the year 1935, approximately 80 per cent of the world's cracking of oils was within the United States. That country produced 205,920,000 bbls. of cracked gasoline derived from heavy oils as against an estimated production of 45,300,000 bbls. for the rest of the world.

The cracking process is in operation in many refining centers of the world, such as: Russia, Great Britain, Canada, Japan, Manchuria, Egypt, Belgium, France, Germany, Italy, Rumania, Poland, India, Burma, Island of Aruba, Borneo, Trinidad, Curacao, Argentina and Mexico, and its use outside of the United States is increasing rapidly.

No prophet upon seeing the shell still cracking units of 23 years ago could have visualized the tremendous technical developments nor ramifications which have taken place in the cracking art since that time. The early shell still cracking unit which cost about $20,000 processed 125 bbls. of gas oil per day producing 30 per cent gasoline. In contrast, the largest unit today costs $2,000,000 and treats 30,000 bbls. of crude oil a day producing 68 per cent of high antiknock gasoline.

The investment in cracking units of 1913 was about $2,000,000 whereas in 1936 it was over $400,000,000. It is interesting to note that over $5,000,000 is now being expended yearly in research in the art of cracking.

The modern cracking process is a highly flexible one, particularly since the introduction of multiple heating coils wherein different time-temperature-pressure conditions may be maintained dependent upon the nature of the cracking stock. Whereas cracking runs of two days were the maximum 23 years ago, the modern unit com-

TABLE 2—SUMMARY OF RESULTS OF TOPPING AND CRACKING EAST TEXAS CRUDE

Charging stock—East Texas crude oil.
Time on stream—62 days, 15 hours.

	Total bbls.	Bbls./ day	Pct. of charge
Topping operation:			
Crude oil	365,214	5,832	100 00
Products produced:			
Finished straightrun gasoline	71,949	1,149	19.70
Topped crude	291,375	4,653	79.78
Gas and loss	1,890	30	.52
Total	365,214	5,832	100.00
Cracking operation:			
Topped crude	291,375	4,653	100.00
Products produced, basis topped crude oil:			
Finished cracked gasoline	159,620	2,549	54.78
Cracked residuum	105,404	1,683	36.17
Gas and loss	26,351	421	9.05
Total	291,375	4,653	100.00
Combination topping and cracking operation:			
Products processed:			
Crude oil	365,214	5,832	100.00
Products produced:			
Finished straightrun gasoline	71,949	1,149	19.70
Finished cracked gasoline	159,620	2,549	43.71
Total finished gasoline	231,569	3,698	63.41
Cracked residuum	105,404	1,682	28.86
Gas and loss	28,241	451	7.73
Total	365,214	5,832	100 00

Gas product—cu. ft., total, 109,251,000.

ANAYLSES OF PRODUCTS

	Crude	Finished straight-run gasoline	Finished cracked gasoline	Residue
Gravity, °A.P.I.	39.0	69.7	60.5	12.4
I.B.P.	108	90	81	....
10 per cent	212	129	126	....
20 per cent	275	146	161	....
50 per cent	537	188	260	....
90 per cent	....	243	358	....
E.P.	....	293	386	....
Octane No., A.S.T.M. motor method	....	69.1	69.3	....
V.P., Reid at 100° F.	....	10.4	11.5	....
Sulfur, per cent	....	0.006	0.036	....
Color	....	30	30	....
Visc. S.F. at 122° F.	....	....	....	72
Flash P.M. °F.	....	....	....	166
B.S.&W., per cent	....	....	....	.035

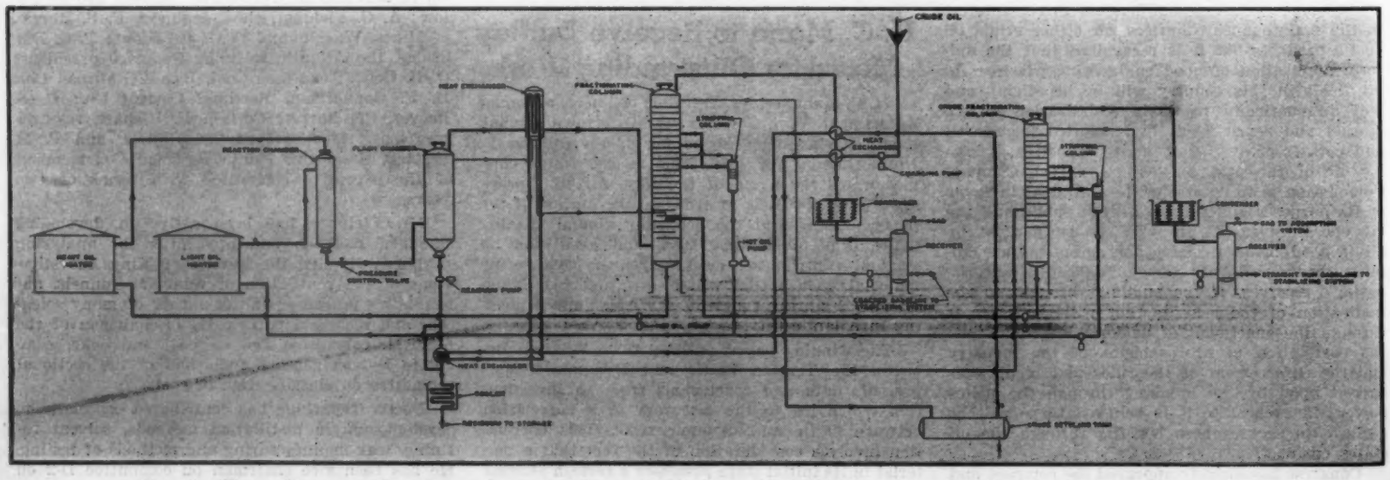

Fig. 1—Flow diagram showing schematic flow of oil through 5,800-barrel crude oil selective cracking unit

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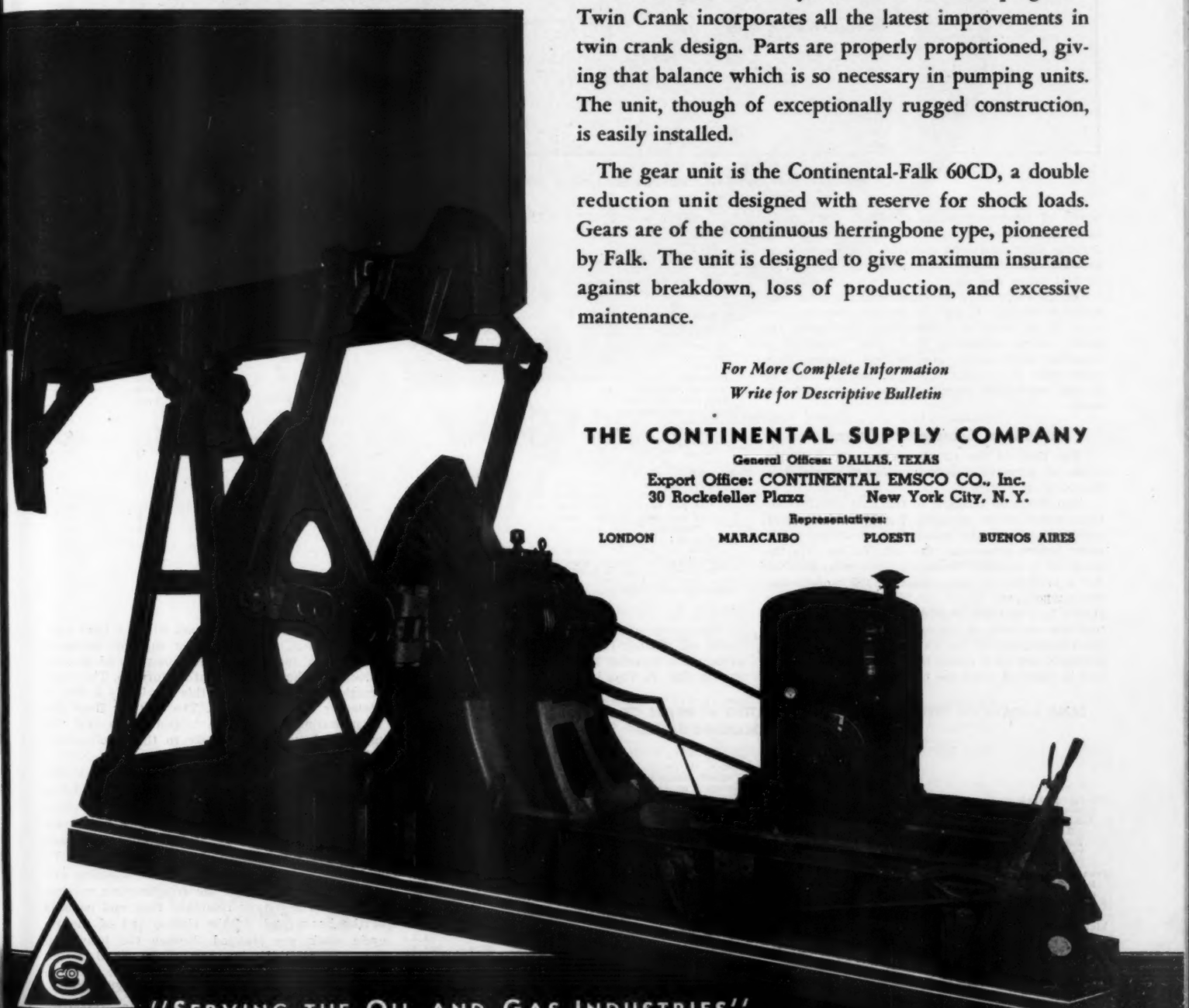
12JT-60 CD GEARED PUMPING UNIT

•• TWIN CRANK



The Continental-Falk 12JT-60CD Geared Pumping Unit Twin Crank incorporates all the latest improvements in twin crank design. Parts are properly proportioned, giving that balance which is so necessary in pumping units. The unit, though of exceptionally rugged construction, is easily installed.

The gear unit is the Continental-Falk 60CD, a double reduction unit designed with reserve for shock loads. Gears are of the continuous herringbone type, pioneered by Falk. The unit is designed to give maximum insurance against breakdown, loss of production, and excessive maintenance.

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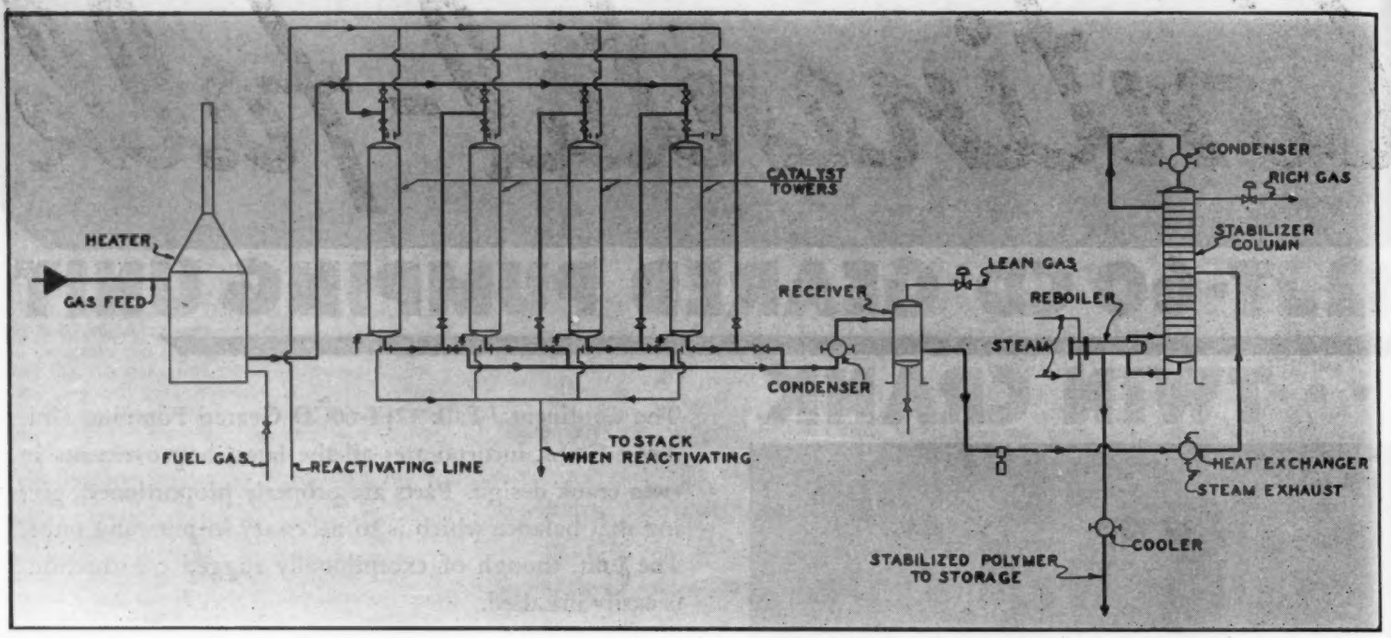


Fig. 2—Flow chart of catalytic method of polymerizing cracked refinery gases

posed of heater, reaction chamber, flash chamber, fractionator operate for more than 90 continuous days producing gasoline, gas and coke, or gasoline, gas, furnace oil, tractor fuel, diesel fuel, or fuel oil as desired.

In the early days of commercial cracking, temperature of 740° F. and 75 pounds pressure were used in the shell still operations, but more and more severe conditions have been employed in cracking until today temperatures ranging from about 900° F. to over 1,100° F. and pressure up to and over 1,000 pounds to the square inch are used.

Results of Commercial Operation

The flow of the oil throughout the 5,800-bbl. crude oil selective cracking system is shown schematically in Figure 1.

The crude oil charged to the unit usually contains water as an emulsion, together with considerable dissolved salts which it is desirable to remove before processing the oil. To do this the crude oil is pumped through a heat exchanger under a pressure of approximately 165 pounds and the temperature raised to 250° F. and is then passed to a settling chamber. Under this temperature the viscosity of the crude oil is reduced and the vaporization of the water is prevented by the pressure, and as a result the salt water drops out and is removed from the bottom of the settler.

TABLE 4—RESULTS OBTAINED FROM REFORMING OR CRACKING VARIOUS CHARGING STOCKS

Charging stock—	Pennsylvania straightrun gasoline	Mid-Continent Straightrun gasoline	Mid-Continent Naphtha	West Texas straightrun gasoline
Gravity, °A.P.I.	58.1	59.8	53.6	58.1
Sulfur, per cent	....	....	....	0.18
Octane number, A.S.T.M. motor method	38	42	34	60
100 c.c. A.S.T.M. distillation:				
I.B.P., °F	152	115	222	95
10 per cent distilled over	215	177	263	160
50 per cent distilled over	280	277	309	374
90 per cent distilled over	354	347	353	364
Endpoint, °F.	396	383	385	392
Operating conditions:				
Pressure, pounds per square inch	500	500	500	750
Heater discharge, °F.	975	1,000	1,000	924
Reaction chamber, °F.	923	950	952	875
Cracking results:				
Gasoline:				
Yield, per cent by volume of charge	73.3	74.7	74.3	91.8
Gravity, °A.P.I.	57.7	59.1	55.5	59.5
Octane number, A.S.T.M. motor method	70	70	70	70
100 c.c. A.S.T.M. distillation:				
I.B.P., °F.	106	89	91	94
10 per cent distilled over	160	146	164	154
20 per cent distilled over	192	180	204	190
50 per cent distilled over	256	259	280	262
90 per cent distilled over	380	356	358	360
Endpoint, °F.	417	379	382	396
Residuum:				
Yield, per cent by volume of charge	1.3	1.3	2.5	1.1
Gravity, °A.P.I.	....	—0.7	—4.5	17.6
Gasoline content, per cent	....	....	....	4.0
Gas and loss, per cent	25.4	24.0	23.2	7 1
Gas, cubic feet per barrel of charge	790	611	762	201

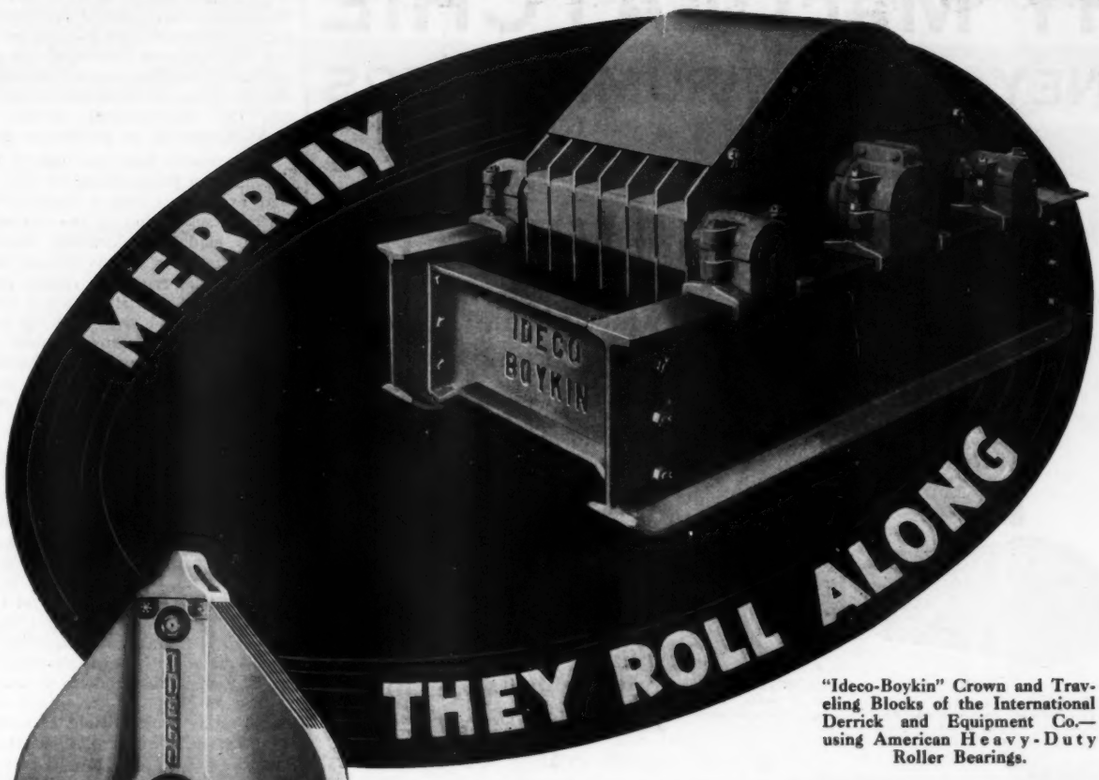
The crude oil is passed from the top of the crude oil settling tank through a series of heat exchangers to raise the temperature to approximately 525° F. This heated crude oil is passed to the crude fractionating column where a light gasoline is taken overhead and a side cut composed of naphtha and kerosene is removed and pumped directly to the light oil heating furnace. The crude fractionating column for this service is 7 feet in diameter by 47 feet high. The bottoms from this fractionating column are topped crude and this material is pumped directly to the fractionating column on the cracking unit.

The topped crude passing down through this fractionating column contacts the hot ascending vapors and a partial fractionation takes place. The vapors passing up are split into a liquid side cut which is pumped to the light oil furnace and heated to a temperature of approximately 975° F., and an overhead consisting of the gasoline and gas. The bottoms from the fractionating column, referred to as heavy combined feed and consists of the heavy ends of the charge and of the recycle stock, are pumped through the heavy oil furnace where the temperature is raised to approximately 910° F. The cracking unit fractionating column is 10 feet in diameter by 58 feet high.

The light oil heater has a rating of 41,000,000 B.t.u. per hour absorbed by the oil and an outlet pressure of 600 pounds. The heavy oil heater has a rating of 35,000,000 B.t.u. per hour absorbed by the oil and an outlet pressure of 300 pounds. The discharges from both these heaters pass to the top of the reaction chamber. The reaction chamber, which is 6 feet in diameter by 30 feet high.

TABLE 3—DATA ON TYPICAL RUNS WHEN OPERATING BY MEANS OF SELECTIVE TWO-COIL CRACKING USING VARIOUS CHARGING STOCKS

Stock—	Penna. kerosene distillate	East Texas Crude	East Texas Topped crude	W. Texas topped crude	Mid-Continent gas oil	Mid-Continent topped crude	Calif. (Southern) fuel oil	Manchurian shale oil crude	Grozny topped crude
Charging stock analysis:									
Gravity, °A.P.I.	45.0	38.6	29.7	20.9	38.5	26.9	18.1	29.7	27.5
A.S.T.M. distillation:									
I.B.P., °F.	322	114	245	466	440	420	446	384	502
Per cent over at 437° F.	44.0	39.0	19.0	0.0	0.0	2.2	....	7 0	0.0
Per cent over at 572° F.	92.0	53.0	41 0	17.5	93.5	26.0	14.5	59.0	11.0
Per cent B.S.&W. (Benzol centrifuge)	0.0	trace	0.7	0.2	trace	0.8	0.01	none	0.07
Pressures, pounds per square inch:									
Reaction chamber	360	350	300	200	350	250	200	346	251
Flash chamber	50	50	50	50	50	50	50	51	50
Temperatures, °F.:									
Transfer from tubes to reaction chamber	938	950	950	925	950	950	925	934	924
Yields, per cent based on charging stock:									
Gasoline	69.8	70.6	63.2	47.6	72.8	62.2	40.2	52.6	58.5
Residuum	7.0	18.6	25.7	44.9	11.9	28.8	52.6	32.6	38.2
Coke, gas and unacc. loss	23.2	10.6	11.0	7.5	15 3	9.0	7 2	14.6	3.3
Gas, cubic feet per barrel of charge	650	397	543	473	634	481	412	486	336
Analysis of products:									
Gasoline:									
Gravity, °A.P.I.	63.6	59.8	56.7	60.0	61.0	56.4	58.0	58.0	61.0
A.S.T.M. distillation:									
I.B.P., °F.	85	102	98	88	84	90	88	110	83
20 per cent	171	180	202	173	170	185	174	190	183
50 per cent	248	259	290	248	251	292	262	268	270
90 per cent	336	381	384	340	357	416	380	352	373
E.P.	355	404	399	375	387	425	403	388	394
Octane No. (A.S.T.M.) motor method	71	68	68	72	74	70	68	67	69
Residuum:									
Gravity, °A.P.I.	7.4	4.3	3.5	6.2	5.5	4 8	7.9	5.3	9.4
Per cent B.S.&W.	0.5	0 1	0.6	0.5	0.1	0 6	0.2	0.5	0.4
Visc. S.F. at 122° F.	....	311	347	105	18	318	250	61	196



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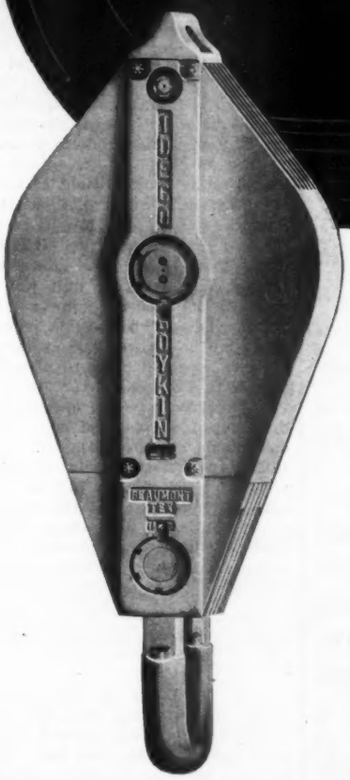

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is maintained at 300 pounds by a pressure control valve at the bottom outlet.

The hydrocarbon mixture from the bottom of the reaction chamber passes to the flash chamber. The flash chamber is 10 feet in diameter by 30 feet high. The flash chamber and subsequent equipment through the condenser and to the receiver is maintained at a pressure of approximately 75 pounds. The material entering the flash chamber is separated into bottoms of cracked residue, and the overhead vapors of the gas, gasoline and recycle stock. The vapors from the top of the flash chamber pass through a heat exchanger and then into the fractionating column, contacting the topped crude oil as previously described.

The vapors from the top of the fractionating column at a temperature of 375° F. pass through heat exchangers and a condenser into a receiver where a separation of the gas and cracked gasoline is made. The cracked gasoline has the required endpoint and is passed to a stabilizer to produce the required vapor pressure gasoline, which normally varies from 8 to 12 pounds Reid depending on the season of the year. The cracked gasoline may be water washed, caustic soda or plumbite treated and then fortified against deterioration by anti-oxidants. It may be colored by a dye, and as such is suitable gasoline for marketing.

East Texas Crude Oil Cracking

A typical commercial run of 62 days in the described apparatus, processed 365,214 bbls. (42 gallons each) of East Texas crude oil at the rate of over 5,800 bbls. per day producing an average of 63.41 per cent finished motor fuel of 69.3 octane number, 28.86 per cent of 12.4° A.P.I. cracked fuel oil and 7.73 per cent of gas and loss.

The East Texas crude oil was analyzed and the properties are shown in Table 1.

A summary of the results of topping and cracking of East Texas crude is shown in Table 2.

The data just given on the cracking of East Texas crude show a yield of 63.41 per cent of 69 octane gasoline and a 12.4 gravity fuel oil of very low b.s. and w. and low viscosity. However, the yield of gasoline and fuel oil is the result of market demand in the area in which this commercial topping and cracking unit was in operation. In other areas where a lower A.P.I. gravity and higher viscosity fuel oil is readily marketed, the unit may be operated so as to increase the yield of gasoline to 70 per cent of a 69 octane gasoline with a fuel oil of Bunker "C" specifications.

A selective two-coil cracking operation to produce gasoline, coke and gas processed during one continuous run from May 12 to October 29, 1935 (168 days), 256,498 bbls. of charging stock. The yield of gasoline was 73.7 per cent, 8.1 per cent coke, 17.5 per cent gas and 0.7 per cent residuum.

The charging stocks were made up of Pennsylvania oils which were processed one after the other without shutdown. Their proportion of 256,498 bbls. total were as follows:

Stock—	Bbls.	A.P.I.
Water white distillate	48,144	46.1
Gas oil, Foots oil blend	199,774	38.6
Petrolatum	8,580	33.0

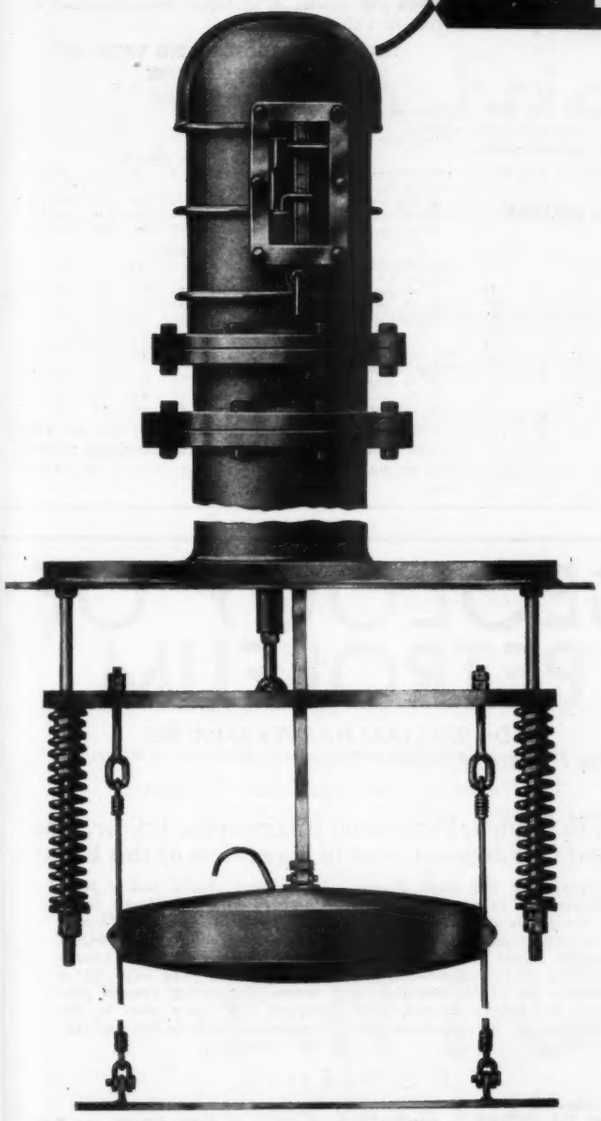
The flexibility of the cracking operation is shown by switching from the production of coke to one of producing cracked fuel oil and back to coke again. During the run, 41 coking chamber switches were made which represents 42 chambers of coke, averaging 87 tons per chamber. During the five and one-half months of operation of this cracking unit, the operation was changed seven times to produce cracked fuel oil.

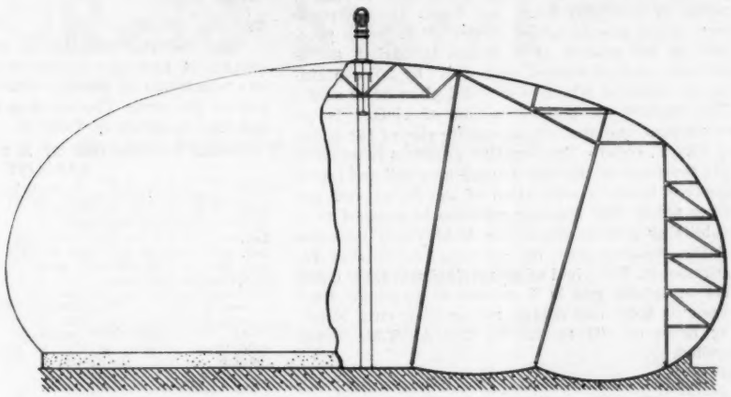
It is interesting to note that the coke deposit in the heating tubes in the light and heavy oil coil varied from a light dust to about one-sixty-fourth of an inch in the last few tubes.

The following data give typical runs when operating by means of the selective two-coil cracking utilizing as charging stocks gas oil, kerosene, topped crudes, and fuel oils, which are described in Table 3.

In addition to the cracking of kerosene, gas oils and topped crudes to produce high-octane number gasoline, naphthas and gasolines are also cracked or reformed to increase their octane number. During 1935 it is estimated that about 25 per cent of the straightrun gasolines and naphthas

S & J Announces Compensating Gauge for Hortonspheroids





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produced in the United States were cracked to produce high-octane number gasolines. Table 4 illustrates the results obtained on various stocks to produce high-octane number gasoline.

Polymerization of Cracked Gases

The cracking process produces gas containing olefins and paraffins which may be converted into motor fuel of an octane rating of 81 by means of high temperatures and pressures or with catalysts at low temperatures and pressures. The thermal process operates under temperature conditions of 900° F. to 1,300° F. and pressures up to 3,000 pounds and higher per square inch, whereas the catalytic process operates under a temperature condition of about 400° F. and 200 pounds.

In utilizing the catalytic process[1], the cracked gas is processed as shown in Figure 2. The cracked gas under about 200 pounds pressure, as in one commercial plant, where 125,000 cubic feet of gas per hour containing 25 per cent of propylene and butylenes is passed through a heater having a rating of 3,200,000 B.t.u. per hour. The temperature of the gas is raised to 400° F. under a pressure of 200 pounds as it passes through a series of four catalyst towers, each 4' 6" by 20' containing the catalyst which is a "solid phosphoric acid." The reaction of polymerization of olefins is an exothermic one and a temperature rise of the order of 130° F. occurs. The reaction products from catalyst towers pass through a condenser coil and into a receiver where a separation of the liquid and gas takes place. The polymer gasoline is pumped to a stabilizing system where the Reid vapor pressure of the gasoline may be controlled to market requirements. The yield of motor fuel per 1,000 cubic feet of intake gas is 5 gallons of 10-pound Reid vapor pressure and octane rating 81 or on a blending basis of 103 to 125 by the A.S.T.M. motor method.

[1]Ipatieff, Corson and Egloff, Ind. Eng. Chem., Vol. 27, 1077, Sept., 1935. Ipatieff and Egloff, Nat. Pet. News, May 15, 1935; The Oil and Gas Journal, May 16, 1935. Egloff, Nat. Pet. News, Nov. 20, 1935.

When approximately 20 gallons of polymer gasoline is produced per pound of catalyst the catalyst in one of the towers is regenerated by controlled quantities of air and is reactivated to its original activity.

Analyses of gases from different parts of the cracking unit are shown in Table 5.

TABLE 5—SOME ANALYSES OF GASES FROM THE CRACKING PROCESS

(Per cent by volume)

Charging stock—	Receiver gas	Stabilizer reflux		Stabilizer gas	
Hydrogen (non-condensibles)	4.3	0.1	4.1	0.6	trace
Methane	23.3	0.1	....	3.4	....
Ethylene	6.0	0.6	....	16.0	1.1
Ethane	17.3	3.2	....	17.8	9.4
Propene	11.2	16.6	11.8	29.0	18.9
Propane	26.8	16.8	28.8	22.2	47.1
n-Butenes	4.0	20.2	11.6	4.9	3.9
i-Butene			8.3		7.6
n-Butane	5.6	40.5	35.4	2.0	11.1
i-Butanes					
Butadienes	....	....	....	2.0	....
Pentane	0.2	1.2	....	0.2	....
Carbon dioxide + Nitrogen	1.6	0.5	....	0.4	....
Hydrogen sulfide	0.8	....	....	0.2	....

The sulfur content is a function of the percentage of hydrogen sulfide present in the cracked gas which can be readily removed by several well-known processes. The analysis of a typical polymer gasoline is shown in Table 6.

TABLE 6—ANALYSIS OF A TYPICAL POLYMER GASOLINE

Gravity, °A.P.I. at 60° F.	67.8
Gum, mg./100 c.c. (copper dish)	44
Gum, mg./100 c.c. (A.S.T.M.)	8
Induction period, minutes	45
Ind. per. + 0.1 per cent wood distillate inhibitor	305
Ind. per. + 0.025 per cent wood distillate inhibitor	595
Ind. per. + 0.05 per cent wood distillate inhibitor.	845
Per cent sulfur, total	0.04
Per cent sulfur, mercaptan	0.006
Octane number (A.S.T.M. motor method)	81
Octane blending value (25 per cent in Fuel A-3; O.N., 44; C.F.R. motor method)	120
Reid vapor pressure at 100° F., pounds	8.6
100 c.c. A.S.T.M. distillation:	°F.
I.B.P.	107
Per cent distilled over:	
5	132
10	152
20	180
30	196
40	206
50	212
60	219
70	235
80	261
Endpoint	409
Total per cent over	97.0
Per cent bottoms	1.5
Per cent loss	1.5

Iso-Octane Gasoline

Cracked gases contain isobutene in varying per cent dependent upon the degree of cracking and nature of charging stock. The cracked gas can be concentrated in a stabilizer so as to have substantially only butenes and butanes. By selective polymerization the isobutene can be converted into di-isobutene or iso-octene which upon mild hydrogenation converts into iso-octanes having octane ratings from 96 to 100.

The blending values of polymer gasoline, iso-octane and benzol in different base gasolines are given in Table 7.

TABLE 7—OCTANE BLENDING VALUE OF POLYMER GASOLINE

(A) Octane Numbers

Polymer gasoline	81
Benzol	97
Iso-octane	100

(B) Polymer Gasoline Blends

Pct. polymer gasoline in blend.	5	10	15	20	25
Octane blending value:					
In 45 octane number base fuel	125	125	121	120	117
In 55 octane number base fuel	125	120	115	113	111
In 65 octane number base fuel	105	105	105	105	103

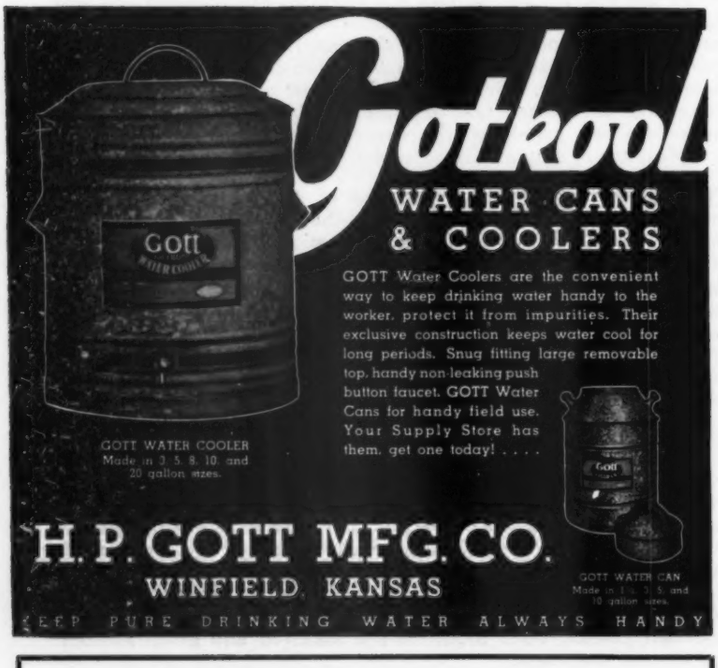
(C) Iso-Octane Blends

Per cent of iso-octane in blend..	5	10	15	20	25
Octane blending value:					
In 45 octane number base fuel	94	94	94	96	96
In 55 octane number base fuel	94	94	95	98	99
In 65 octane number base fuel	94	94	95	97	97

(D) Benzol Blends

Per cent of benzol in blend.....	5	10	15	20	25
Octane blending value:					
In 45 octane number base fuel	84	85	84	84	86
In 55 octane number base fuel	84	85	88	90	89
In 65 octane number base fuel	84	85	88	90	91

The polymer gasoline adds from 3 to 5 per cent to the yield of gasoline from the cracking process and increases the octane rating from 1 to 2 numbers.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Automotive Design Changes, Their Relation to Modern Motor Fuels

By WHEELER G. LOVELL
General Motors Corporation*

The interests of the public, our customers, are best to be served, as are also our own interests, by securing the best possible fitting together of fuel and engine. In the past, there have been great changes in gasolines and engines and there is no reason for believing that such changes are at an end. In general, there are ample data to show that today's fuels and engines are better fitted together than in the past; there is every reason to believe that in the future the fit will be much better. And meetings such as these today go a long way in helping to reach such a condition.

We think that Doctor Brown is especially to be congratulated on the very considerable amount of data he has obtained in the course of his investigations on gasoline volatility. We know how very hard it is to get reliable data on such seemingly simple but actually complex variables as, for example, miles per gallon and performance of cars. This is especially so since cars are run out-doors and it is difficult to get in advance special preferential arrangements with the weather man so that there will be no ice on the roads and the wind will not blow. Consequently, it is only by very careful, patient work that one may arrive at figures which may be relied on as pertaining to the particular conditions investigated. And it is only upon the basis of facts that true substantial progress may be made.

Most of us would like to utilize all of the potential advantages of more volatile fuels. There are two aspects of volatility which merit consideration. One is what might be called extreme front end volatility or higher vapor pressure. As Doctor Brown has pointed out very clearly, the use of fuels of higher vapor pressure alone offers to the driver of the car no gains immediately apparent to him in mileage, performance, or price of the fuel. Consequently, the potential advantages accruing to the customer are very limited. He needs a vapor pressure such as is necessary to have in order to maintain a balance with the over-all volatility of the fuel. Vapor pressure appears then, as one of the disadvantages accompanying fuels of greater over-all volatility. In order to use fuels of greater over-all volatility which have potential advantages for the gasoline user, it is sometimes necessary to have fuels of higher vapor pressures, and in this respect alone do the higher pressure fuels have a secondary potential advantage. This is by no means unimportant, of course.

It should be pointed out in connection with the use of fuels of extremely high vapor pressure —by which is meant higher pressure than must necessarily accompany any reasonable increase in over-all volatility—that adapting cars to use such fuels satisfactorily is by no means simple or cheap. This is contrary to a view that has sometimes been expressed, but a great deal of work has been done on the problem of handling fuels of moderately high vapor pressure. And some of the cars now on the road have fuel lines running outside the frame, around in front of the radiator, together with larger fuel pumps and other safety factors.

One factor which has sometimes been considered as a limitation to the utilization of more volatile fuels is what has been called the style factor. The public has shown a preference for a car that is low, with narrow radiator openings, and with louvers on the hood which do not render the engine conspicuous. This does not appear to us as being fundamentally concerned with the use of more volatile fuels. It is true, and it must be realized, that the automobile is style merchandise to a very considerable extent. The manufacturers are going to make a style which the public wants, because if they don't they will go out of business. However, this by no means signifies that this style factor will necessarily be a limitation on the use of fuels. It has not generally been so in the past, as witness the fact that during the period in which present styles of car appearance have developed, cars have been improved in ability to handle more volatile fuels satisfactorily. The style factor does, however, put a greater burden on the ingenuity of the engineer in that he must design the working mechanism of the car so that it will operate satisfactorily in a vehicle of such outward design and style that the public will approve. Sometimes, in order to do this, there is additional expense involved, and the automobile manufacturer must weigh the additional cost against the advantages to be gained by the use of the more volatile fuels.

These advantages of more volatile fuels—and we mean fuels of greater over-all volatility in this connection—are potential advantages. Volatility, as well as octane number incidentally, is an index of the potential value of a fuel. It gives an index of what can be done in the way of getting economy and performance out of a fuel when

*Discussion of G. G. Brown's paper, "Ten Years of Research," before Natural Gasoline Association of America, Tulsa, this paper also being presented at the same meeting.

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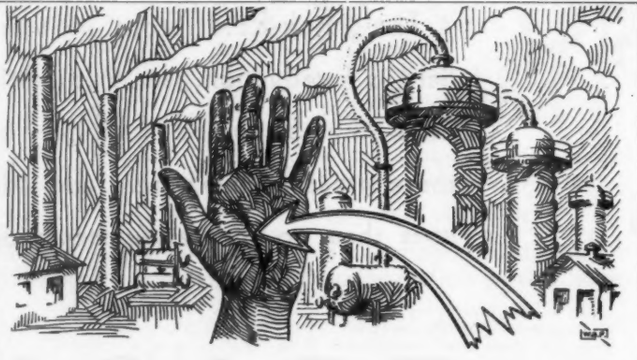

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engine changes are made. As Doctor Brown has pointed out, volatility has practically no effect on power or fuel consumption of standard warm engines. Only at low atmospheric temperatures or with cold engines, or with a less amount of heat on the manifold do fuels of greater over-all volatility appear superior, but their superiority under some conditions is very great. In other words, volatility doesn't, under most conditions, have much to do with what happens when the potentially superior fuel is simply put in the tank of a car. This is just another way of saying that engines have been built in the past to run on average fuels under a wide range of normal conditions. On the other hand, it is possible to make changes in an engine which will utilize much of the potential superiority of a fuel of greater over-all volatility.

These changes are, as Doctor Brown has demonstrated with his road-test data, simply to reduce the mixture temperature and make some adjustments on the carburetor. It sounds very simple, and it is; and the advantages are very great. It does, however, have some limitations in the way of practical difficulties which must be taken into account. It is these which we should like to name and discuss for a few minutes.

The first limitation has to do with how far one can go in reducing mixture temperature. There is no question but that mixture temperatures have been going down over a period of years. But what is the bottom? Now mixture temperature is concerned with three factors: first, how hot the air going into the carburetor is; second, how much heat the manifold supplies, and third, how much heat the fuel takes out in vaporizing. By using these three factors, Doctor Brown has taken the final mixture temperature on his experimental car down about 50 degrees. He has reduced the temperature of the air going to the carburetor about 20 degrees until it is only about 10 degrees above the atmosphere. Clearly, atmospheric temperature is probably the bottom here; we can't have air refrigerators on cars very easily at present. But at the same time, we can't run cars around the country without hoods on them as Doctor Brown has done, because the customers might not like them. What would have to be done to keep the carburetor inlet air temperature near atmospheric is to rig up a special insulated air duct to the carburetor; that is perfectly possible from a strictly engineering standpoint. The second factor that can be controlled to reduce mixture temperature is the supply of less heat to the manifold. Doctor Brown on his experimental car has done a very thorough job of bundling and insulating the manifold and has reduced the mixture temperature about 20 degrees in this way. This is probably about the bottom and is about as much as can be expected.

The third factor is the amount of heat that the evaporation of the gasoline takes out of the mixture. The observed differences between gasolines of extreme differences in volatility is about 5 to 10° F., and this looks like about the limit.

To add up the effect of these different factors, then, the maximum reduction that might be expected on this car which is probably a fairly representative vehicle, is about 60 degrees or only 10 degrees more than that accomplished experimentally. To do that, we have used a very volatile fuel, taken all the heat off the manifold, and run an insulated air duct to the carburetor, heated the fuel line to prevent ice formation and also adjusted the carburetor slightly. All these things are quite possible from an engineering standpoint and seem to indicate about what the limit is to progress in this direction. The advantages of doing this are a very considerable increase in performance—acceleration and top speed—and little sacrifice in economy.

Now, we can think about what happens when we do this, and what the practical limitations of doing this might be. In the first place, cars have to operate under a wide variety of climatic conditions and over a considerable range in temperature. With our imaginary set-up the mixture temperature is controlled by the atmospheric temperature only. But if the temperature drops 30 degrees over night, as sometimes happens, and the mixture temperature is right for the high temperature, it is too low for the low temperature. So we have to put on a thermostat and heat the mixture up 30 degrees when it is cold. This is perfectly possible from a strictly engineering standpoint, of course, but it clearly limits the maximum amount we can cut down the manifold temperature. We have to heat the mixture up when the weather is cool so that the mixture will not be too cold, and in fact, not be much colder than it is when the atmospheric temperature is high and no heat is being supplied. This comes about because we need to operate with a fairly uniform mixture temperature as we do now with thermostats and so on. Now clearly, we do not need to provide for extremes of temperature from 40 below in the winter to 100 above in the summer, because we assume a seasonal adjustment in gasoline volatility to take care of this. But we do need to take care of daily and weekly variations. In other words, on the average, we have to heat the mixture half the days in order to make up for the other half when it is too cold. Now this is quite possible; the important thing is that it does cut down the amount by which the manifold temperature can be reduced. That decrease in allowable reduction may be as much as 30 degrees, and this cuts quite a slice off the 60-degree maximum temperature reduction we mentioned a moment ago. We cannot emphasize too strongly the absolute necessity of building a car that will operate equally well on Tuesdays and Thursdays irrespective of changes in atmospheric conditions. The two big handicaps under which the automobile operates are those due to variations in atmospheric temperature and altitude. The success of the automobile has been largely due to overcoming these handicaps, and it would be clearly folly to become subject to them. Consequently, the maximum reduction in mixture temperature we can get is limited to a half—or less—of what one might otherwise expect. There is thus a serious limitation to the use of more volatile fuels in that the necessity of operating under a range of climatic conditions

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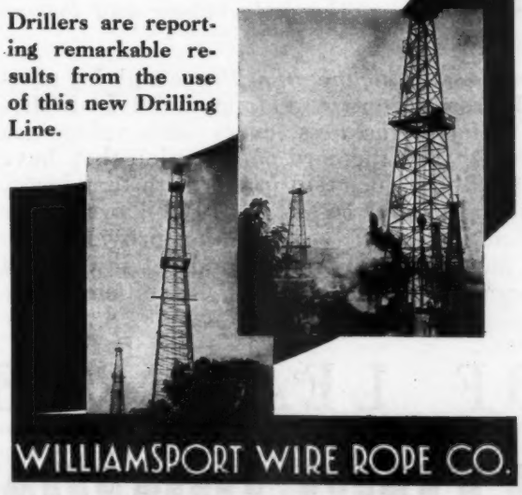

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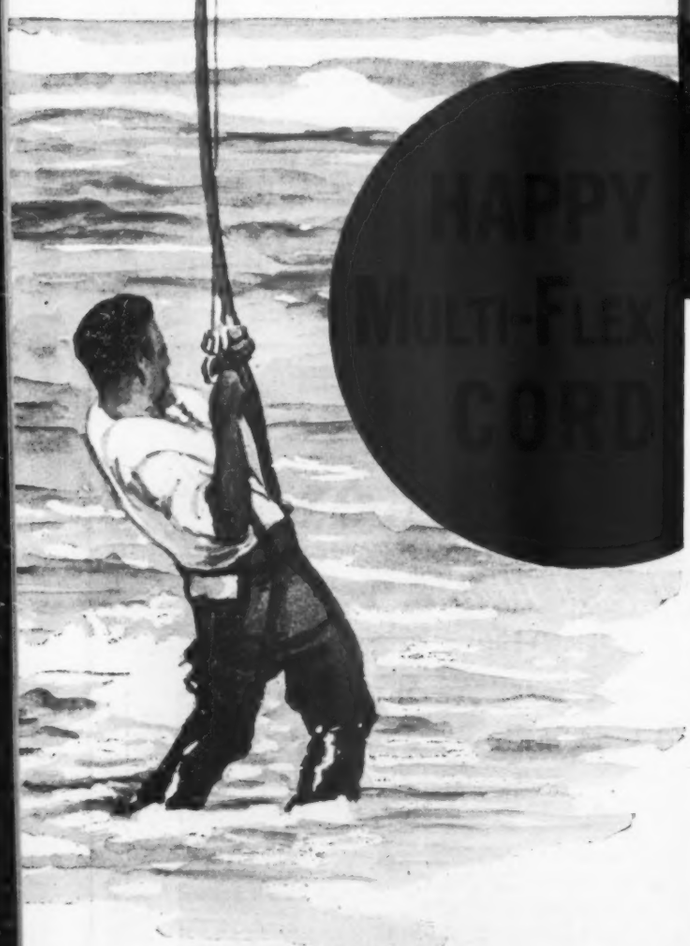

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has limited the realization of the values of more volatile fuels to one-half or less of their potential values.

There is a second limitation to the effective use of highly volatile fuels which at present is even more serious than that discussed thus far. Let us assume that we build a car—in imagination—that will permit the maximum reduction in mixture temperature subject to the limitation just discussed. Now this car needs a very volatile gasoline to operate at all satisfactorily. But, as Doctor Brown has shown so well, when we put in it a gasoline of much less volatility the car does not operate so well—it stutters and coughs on acceleration, for instance. Now that difficulty can be overcome by putting more heat on the manifold when we put the less volatile gasoline in the tank. So we put a little imaginary knob on the dash of the car to control that. When the driver buys some gasoline, he adjusts the knob of his mixture thermostat to correspond, and all is well except for two things. The first is that such adjustments are a nuisance, to put it mildly. A good deal of the success of the automobile has been due to the fact that it has become more and more automatic, so that anyone at all can drive a car—the driver doesn't even have to know that the engine has cylinders. More and more adjustments have been taken off the dash, so that there are practically none left except the light controls. Clearly we should not sacrifice that advancement and put on a gasoline volatility adjustment. The customer wants a car to go places in, not to fiddle with.

Furthermore, suppose we do have such an adjustment on cars and the owner upon driving into a filling station wants to set his volatility control to suit the gasoline he is buying. How does he tell how to do it? There is at present no index of the volatility of gasoline—no specification—all he does is buy, let us say, "regular" gasoline. And we all know that the variation in gasolines being sold now is enormous, and about as great as the range of gasolines Doctor Brown worked with. Cars have to be built to run on practically all gasolines at present. If there were some specification of gasolines so that the range were not so great, or some index so that the driver could be told to buy gasoline of a certain volatility without designation of brand name and be sure of getting it, the situation would be quite different. But under present conditions cars have to be built to operate reasonably satisfactorily on the gasoline of about the poorest volatility. Consequently, such cars cannot take full advantage of the potential value of the more volatile fuels.

These two limitations: first, that due to atmospheric variations which cut down the maximum theoretical utilization of the potential value of more volatile fuels, and, second, that due to variations in gasolines commercially available which practically limit the advancement to the least volatile fuel because of the lack of suitable widespread designation of gasolines with respect to volatility, are both very serious. The success of the automobile is largely due to overcoming the inherent handicaps due to the necessity of operating with changing temperature, altitude, and fuels. We cannot do much about the weather and elevation; but perhaps something can be done to secure more uniform fuels, or classification of fuels, so that we may take better advantage of their potential values. Because we all want to see more progress towards higher operating efficiency and conservation.

Correction of Haider Paper

In publishing the paper on "Productivity Index" presented by M. L. Haider before the Mid-Year meeting of the A.P.I. and printed on page 91 of May 21, 1936, issue of The Oil and Gas Journal the captions over the last three columns in Tables 1 and 2 were set as heads instead of being arranged as fractions with "Barrels per Day" as the numerator and the other terms as the denominators—thus:

Barrels per day	Barrels per day	Barrels per day
Pressure differential	(Pressure differential)*	(Pressure differential)†

*One-half power. †Three halves power.

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ENGINE CARBON — A Monkey Wrench in the Works of Progress

By J. C. LIVINGSTONE and W. A. GRUSE
Mellon Institute of Industrial Research

Carbon in engines has been a common trouble since the early days of the engines. Not so many years ago the practice of burning it out with oxygen was still generally in use. In those days it was not unusual to clean or burn carbon every 500 miles. Because of this need for frequent servicing, the early engine with head and cylinder cast integrally was changed to the detachable head type, but the removal of carbon was a large part of engine maintenance up to about 1927.

At that time a general advance in the production of anti-knock gasolines and in engine design seemed to remove the carbon problem from the picture; carbon cleaning became no more frequent than the need for valve grinding.

In the last few years the trend in engine design has been to more efficient engines and greater horsepower per pound of engine weight. New developments in valve steels and the introduction of water cooled valve inserts have removed the need of frequent valve grinding. Compression ratios have been raised and combustion chamber shapes improved. Fuels have become standardized at somewhere near the highest octane numbers it is practical for the petroleum industry as a whole to produce. We have reached a condition where the carbon deposition is a limiting factor in our goal of more efficient operation; and we find it necessary to clean carbon or to use premium gasolines in order to keep away from detonation and preignition. Since the need for frequent valve grinding has been eliminated the usual solution is use of a premium gasoline.

It is true that this solution is quite satisfactory with current engines, but it must be remembered that the automotive engineers can not design engines to take advantage of these premium qualities because of the formation of carbon. If the engine knocks on premium fuels carbon must be removed; there are not available at present better fuels in large quantities and the engine designer must always keep a little behind the fuel. This little bit represents the difference between oils of high and low carbon depositing tendencies.

Design

Three types of engines have been produced in quantities: L-head, valve-in-head, and sleeve valve engines. Each has its advantages and disadvantages. The valve-in-head and L-head motors have lent themselves to large increases in compression ratios, and it is in these engines that the insulating properties of carbon give detonation and preignition. In the sleeve valve engines, of which we hear little at present, carbon trouble takes the form of clogging of ports and the sticking of junk rings.

Differences of design that affect temperature have in the past been among the most influential factors governing differences in the amount of carbon deposited. In general these differences have largely been ironed out by the universal adoption of cooling water thermostats.

Detail

It is of course assumed that cases of bad fabrication, such as those resulting in uneven wall thicknesses, can be disregarded. The direction of their influence is fairly obvious. The adoption of shaped heads (Ricardo type, etc.) has made necessary the machining of the inner head surfaces. This has resulted in much smoother interior finish, which gives less opportunity for adherence of deposits, and makes cleaning much easier. Turbulence of the incoming gases, which has been sought for other reasons, presumably serves to sweep wet oil films away from pockets, and to make for more even distribution of deposits.

In the development of more efficient engines, valve guide and ring and piston clearances have been lowered, and the design of these parts, as well as that of rings, has been improved until oil consumption has been lowered close to the danger point. At the same time improvements in carburetion and automatic chokes have been influential in effecting a slight but general leaning of fuel mixtures. On the newer cars, mixtures may be approaching their theoretical lean values. Driving speeds and daily automobile travel have increased with resulting better operation from a carbon deposit standpoint. In fact most of the variables in engine design and operation which affect carbon deposition have been greatly improved. But with all this great advance in automobile technology, the carbon problem becomes increasingly important as compression ratios and efficiency increase. The notable improvement in engines and in fuel has not changed the condition which keeps the best engine lagging behind the best fuel because the two must operate in the presence of an insulating layer of carbon.

N.P.A. Motor carbon is an age-old problem. This paper was presented before the association at State College, Pa.

Condition

The greater proportion of the cars operating today are not of the new high compression type. They were built during the period when design was effective in avoiding carbon trouble. They are in most cases now well-worn and show fairly high oil consumption. The carbon deposits, as discussed below, have reached a sort of equilibrium, and the compression ratios are sufficiently low so that the insulating layer does not cause any detonation trouble. All these old cars can probably travel to the wrecker without giving any more carbon trouble; but the new cars are quite different, and present a real problem. Attention has recently been called to a case in which extra tightening of the cylinder head bolts is alleged to have increased the compression ratio from 6.5 to 7.3. Even if this is regarded as extreme, it indicates that the time has now come when a layer of carbon can have an appreciable influence in raising engine compression ratio.

Motor Fuel—There is a widespread popular impression that the fuel used in a motor can have a large influence on the deposits formed, and a definite denial of this idea in the technical press, for which we are largely responsible. Within limits both views are correct. The experimental data presented by us in 1926 (Marley, Livingstone and Gruse, J. Soc. Automotive Engrs., 28, 607 (1926)) were as follows:

When an engine under rigid control is operated reproducibly with a lean fuel mixture, a fairly heavy load and a fairly high head temperature, and when, furthermore, distribution of fuel is excellent because the engine has only one cylinder, the fuel can be varied widely below the gasoline range without changing the amount of carbon deposit so long as the lubricating oil is not changed. The data are as follows:

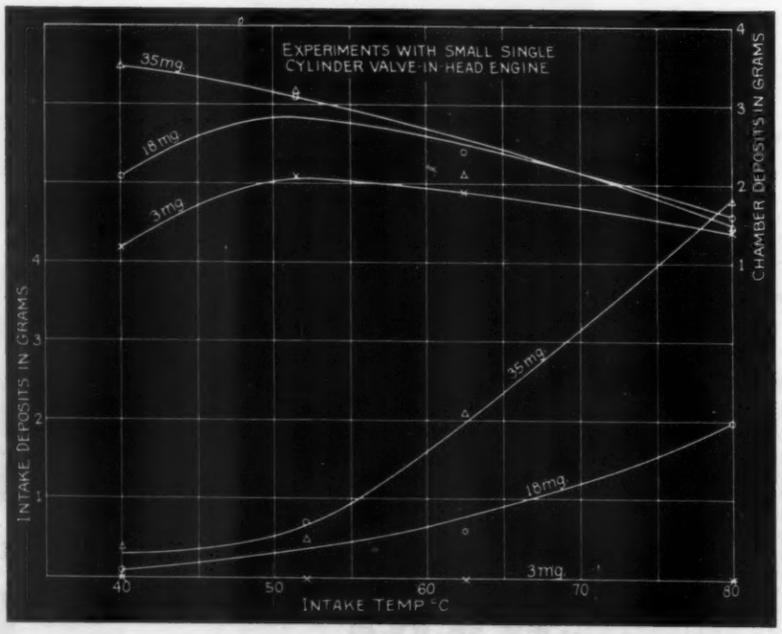


Fig. 1—Engine deposits from gum-bearing gasolines

Volatility

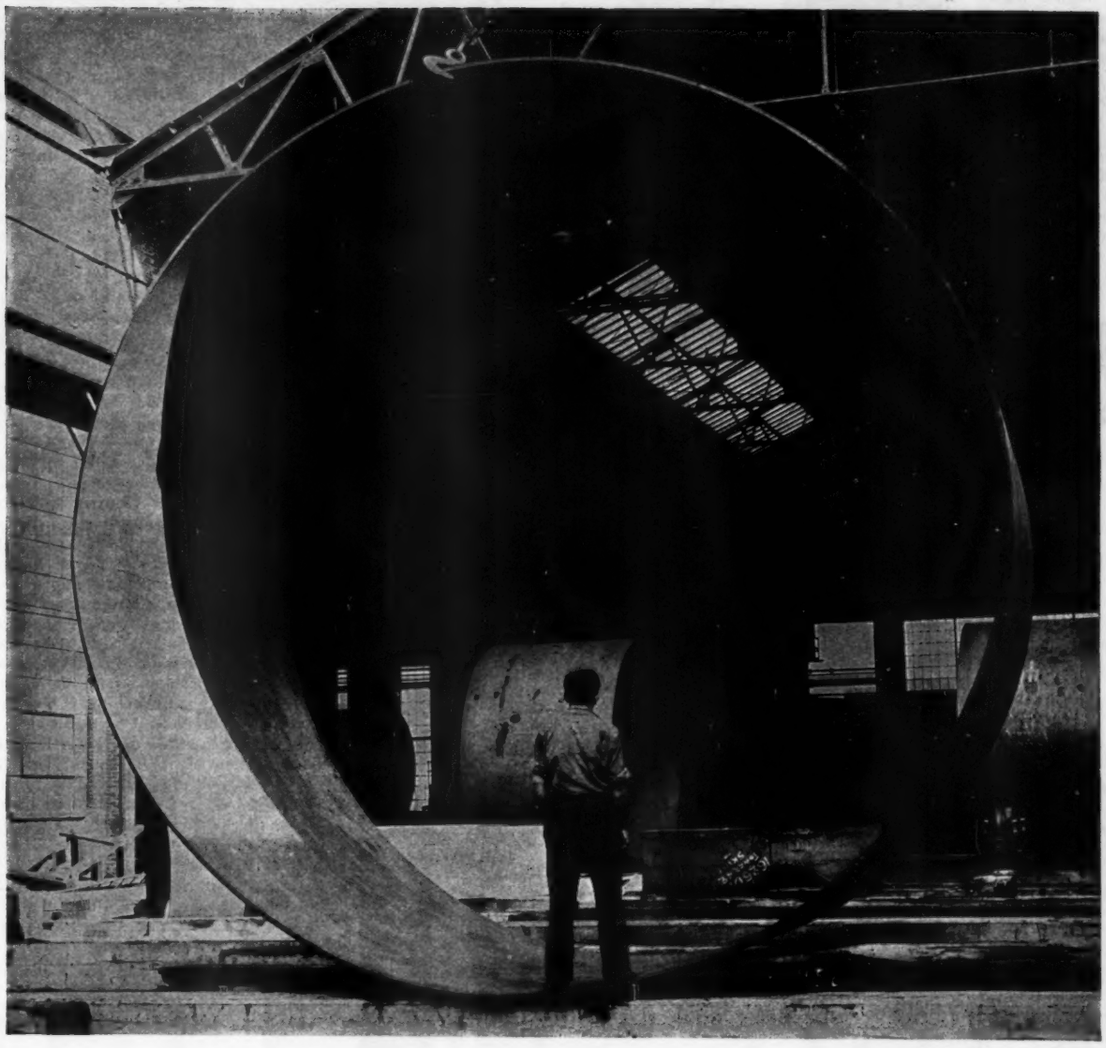
Fuel:	Carbon deposit gm./liter of oil
Natural gas	7.7
Casinghead gasoline	8.7
Motor gasoline	8.3

As soon as the fuel is high boiling enough to be outside the gasoline class, the deposit increases.

Fuel:	Carbon deposit gm./liter of oil
Cleaner's naphtha	14.6
Kerosene	14.3

Chemical Composition

Considerable change in chemical composition is possi-



● This carbon steel plate one inch thick, ten feet in width and fifty feet six inches long—the LARGEST SURFACE AREA EVER ROLLED —has just been welded into a cylinder sixteen feet in diameter.

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ble, so long as the product is still gasoline, without changing the deposit:

Fuel:	Carbon deposit gm./liter of oil
Lead-free high octane gasoline	8.1
Light gravity blend	8.2
40 per cent benzol blend	9.3

The slightly higher figure for a benzol blend is not considered significant. The higher figures for naphtha solvent and kerosene are probably due to bad carburetion and partial burning of big spray droplets. Kerosene is appreciably more viscous than gasoline.

Gum Content

Gum in gasoline is not much of a worry to anyone now except where, for some reason or other, fuel is kept in storage for inordinately long periods. But occasionally this might happen and it is of interest to know what effects an appreciable gum content will have on the deposits. Taking the simple case where the gasoline is rated by the copper dish test, which we must consider only qualitative, keeping all conditions constant as above for carbon deposits, we get

Copper dish gum of fuel....	10	100	300	500	600	800
Carbon engine gm./liter of oil	4	6	7	8	13	14

No manifold heat was used on this engine.

Taking another extreme case, in which we used as fuel an old pressure still distillate having a steam-oven gum number of 265 mg./100 cc., runs were made with and without intake heat on a single-cylinder full sized L-head engine. All conditions were constant, the air-fuel ratio was 13 to 1 and the load one-third of capacity. The runs were of 25-hour length, and the following were noted:

Fuel 265 mg./100 cc. steam oven gum.

Intake temp. °F.	Intake deposit gm.	Chamber deposit gm.
86	0.5	8.5
176	29.6	6.5

The same amount of gum had gone into the engine in both cases. Where the intake was not heated, there was a small increase in carbon deposit. Where the intake was heated, an enormous deposit formed in the intake system. In one case it dropped out on the walls, and in the other case it went on and was largely burned with the fuel. Only a little of it, about 7 per cent, deposited on the oil film and contributed to the residue. Taking less extreme cases in which intervals of manifold heat and only moderately gumming fuels were employed, it is shown in Figure 1 (Marley and Gruse, Ind. Eng. Chem., 24, 1298 (1932)) that as the gum content of the gasoline rises the carbon deposits increase if the intake is not heated. But if the manifold is heated, the intake deposits are progressively less, until at 80° C. (176° F.), the gasolines of 3, 18 and 35 mg. gum content all give about the same carbon deposit. In other words, the fuel which gets to the combustion space is essentially the same in the three cases because all the gum has dropped out on the intake walls. This is shown by the lower curves in the figure.

In spite of these generally negative indications, it is probable that the fuel can have a good deal to do with combustion chamber deposits. Our experimental work (J. Soc. Automotive Engrs., 18, 607 (1926)) showed that where mixtures are rich and temperatures low the deposits are greater than when temperature is low and mixtures are lean. This is probably dependent on incomplete burning of sprayed fuel to tarry complexes, which stay in the oil film and the depositions of soot from smoky flames of overrich vapors. Running under city conditions in winter with an automatic choke dependent on the engine temperature is an excellent way to accumulate carbon. A particularly important factor in the modest contribution of the fuel to the carbon deposit is the matter of distribution of fuel to cylinders. The recent report by Clayden on propane as an engine fuel (Petroleum Division, Am. Chem. Soc., Kansas City, April, 1936) referred to the cleanliness of the cylinders. This is presumably attributable to the even distribution of the gaseous fuel. In other words it is not because propane is so very good, but because gasoline distribution is often bad. Enough large liquid droplets are formed to deposit partially unused, asphaltized material over the metal surfaces, where they probably act like the resins originally present in a lubricating oil—they give a solid deposit. In addition a rich mixture will burn with a smoky flame, leaving a deposit of soot. Thus, when an engine runs rich and cool, with a certain amount of bad distribution, the fuel can be an appreciable factor in carbon deposits; but the ideal engine in perfect condition would get its deposit from lubricating oil only.

Lubricating Oil

An analysis of the service to which a motor oil is exposed shows that five sets of conditions are effective:

1. In the crankcase the oil is heated to an average maximum not much above 212° F., say 250°; it is agitated violently and thrown as a mist into the free space under the block: and it is exposed to a supply of air renewed fairly promptly by the crankcase ventilator and air-breather. This condition is prolonged and the oil gets much of this sort of treatment.

2. In the bearings oil at crankcase temperature is passed very rapidly through small passages and between closely fitting moving surfaces, picking up the heat energy generated by the friction as well as some conducted heat. The temperature rise is presumably never over 100° F. where design is sound. To the extent that crankcase gases (some air) are sucked in with the oil by the pump, there is opportunity for oxidation at a temperature a little above that of the crankcase. No acute deteriorating influence is effective here under normal conditions. Any possible catalytic influence of new bearing metals on oxidation is so far not well enough understood for discussion.

3. On the cylinder walls and in the ring grooves a thin film of oil is exposed in the absence of air to a temperature averaging, say, 300° F. This exposure is short, since the oil is either pushed up or washed down; but some part of the oil is exposed to this set of conditions very

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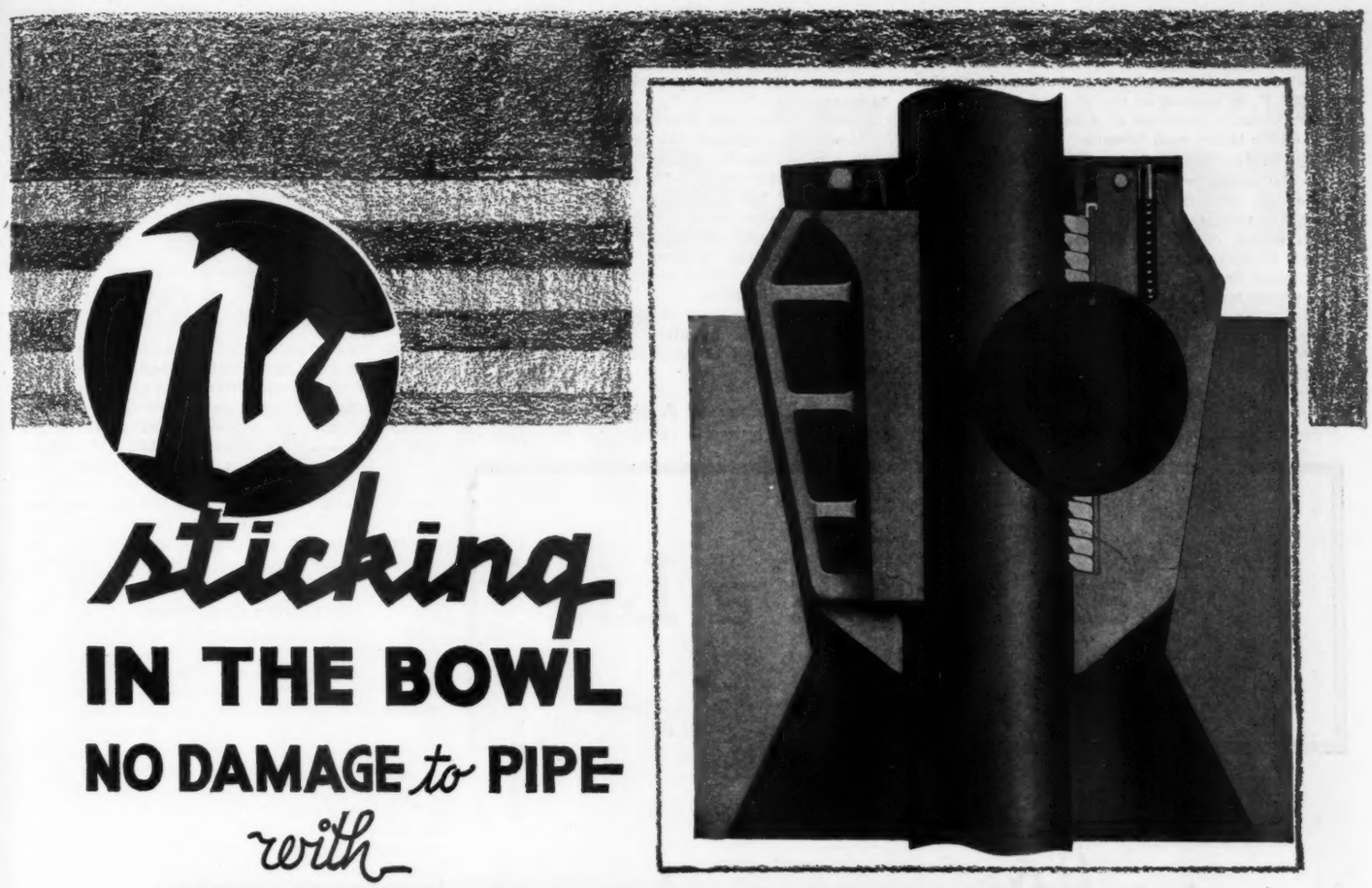

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many times. "Heat-soaking" and slow vaporization can occur under these conditions.

4. On the underside of the piston crown a film of oil at a temperature varying from, say, 450° to 550° F., is exposed to the crankcase atmosphere which permits oxidation at a faster rate. The access of air is not good however.

5. In the combustion chamber oil flows out over the piston crown or is sprayed into the gas space and onto the head surfaces. The droplets caught in the gas space by the flame are presumably burned, or at least carried out by the exhaust. From this source comes the blue exhaust of a motor burning too much oil. Very large droplets would be singed and partially coked by the flame, only to be deposited on the walls and valve surfaces or in the exhaust system. Since oil spray in the chamber can occur only during the intake stroke it is not likely that many large droplets will survive in the vapor until flame reaches them during the power stroke. The oil on the head and piston surfaces is exposed to a periodic broiling by a flame in an atmosphere containing gasoline vapor enough to take up all the oxygen present. Such of the oil as can vaporize under the conditions will do so and the remainder is very likely to be coked.

Summarizing, the crankcase condition is one of slow, long-continued, low temperature oxidation with a somewhat insufficient supply of oxygen.

The cylinder wall and under-piston condition seems one of low temperature coking distillation. The under-piston condition includes higher temperature with poor air supply.

The combustion chamber condition is one of high-temperature coking distillation with little or no chance of oxidation.

With this very brief picture of what happens to oil in an engine in mind, it seems desirable to consider the effect of some of the characteristics of the lubricant.

Resins and Asphaltenes

The simplest way to picture the formation of a deposit is probably that involving the evaporation of a solvent to leave a layer of the dissolved non-volatile solids. The evaporation of a lacquer to leave a coated surface is a case of this sort. We know that certain types of oils contain a recognizable proportion of non-volatile solids, substances we call petroleum resins and asphaltenes. For naphthenic distillates of 50 and 80 seconds Saybolt at 210° F., and a Pennsylvania cylinder stock of 225 seconds at 210° F., Garner (J. Inst. Petroleum Tech., 7, 98 (1921)) found, in our laboratory, resin content as follows:

Naphthenic distillates	Untreated	Acid-treated	Clay-contacted
50 at 210	2.4	1.2	...
79 at 210	2.5	...	...
Penna. cylinder stock. ...		7.0	4.0

(Figures in percentages)

The ready conversion of these resins to asphaltenes and their instability at high temperatures are now well known. Garner was at the time able to show that both the coke formed in the Conradson test and the deposit measured in the Waters test (Ind. Eng. Chem., 3, 233, 811 (1911): 8, 587 (1916); Tech. Paper No. 73 (1916) Natl. Bur. Standards) increased with the content of resins. In other words, at both low and high temperatures, a content of resins in an oil is likely to end up as carbon deposit. Such a view is supported by Steinkopf and Winternitz (J. Prakt. Chem., 101, 82, (1920)).

Coking Constituents

The resins and asphaltenes in an oil may be regarded as already half way to carbon; but there may be present or produced hydrocarbons which are specifically of the coke-forming sort. The experimental work on cracking carried out by Sachanov and Tilicheyev (Chemistry & Technology of Cracking, p. 129, New York, 1932) has supported strongly the idea that highly condensed aromatics —higher homologues of substances like anthracene and phenanthrene—are notorious as coke-formers. To the extent that such or analogous compounds are present in an oil they would form coke in greater amount than say the normal naphthenic hydrocarbons which we think of as making up the bulk of a lubricating oil. To what extent polynaphthenes share this tendency is not known. The above remarks refer to formation of coke only. The properties of the coke, and what happens to it after it is formed, are considered later.

Oxidizable Constituents

There is substantial agreement among those concerned that the oxidizing tendencies of the motor oil are of much interest as related to engine deposits, but most of the agreement ends at that point. The manner of measuring oxidation, the nature of the products, and the significance of these products in engine operation are all subjects of disagreement. What little is known about the chemistry of resins and asphaltenes suggests that they are oxygen compounds or derived from such. It is not certain, however, that those present in new oil are oxidation products since they may have persisted from the source materials of the crude.

In the oxidation of cracked gasoline there are produced, along with some low molecular weight compounds, appreciable quantities of high molecular weight substances—the so-called gum. Apparently in the oxidation of lubricating oil similar phenomena occur. It is probable that unstable peroxides are first produced, which may catalyze further oxidation. Low molecular weight acids are formed, and it is probable that aldehydes and ketones could be identified. In practically all cases in which oxidation is carried far enough there is precipitation of an insoluble black material, known as tar or sludge, the bulk of which can be classified empirically as asphaltenes, and which goes over easily into coke. The presence of such compounds suspended in an oil will increase markedly the deposits formed when the oil is exposed to high temperature, acting quite like the resins and asphaltenes found in new oil. The nature of the oxidation makes it easy to understand an increase in acidic and saponifiable constituents and in carbon residue. There is usually also a definite increase in viscosity.

Volatility

Consideration of what was said about what happens in the combustion chamber of an engine

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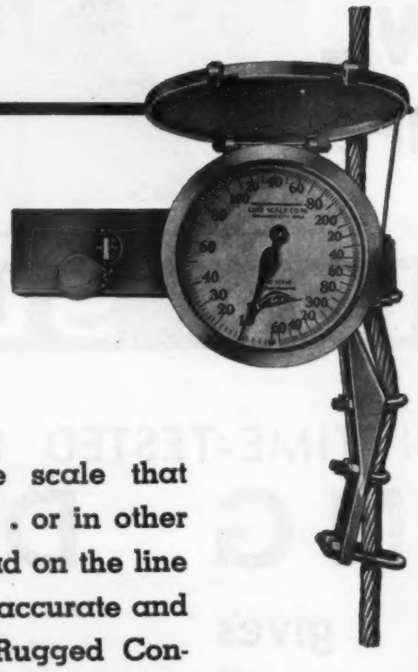

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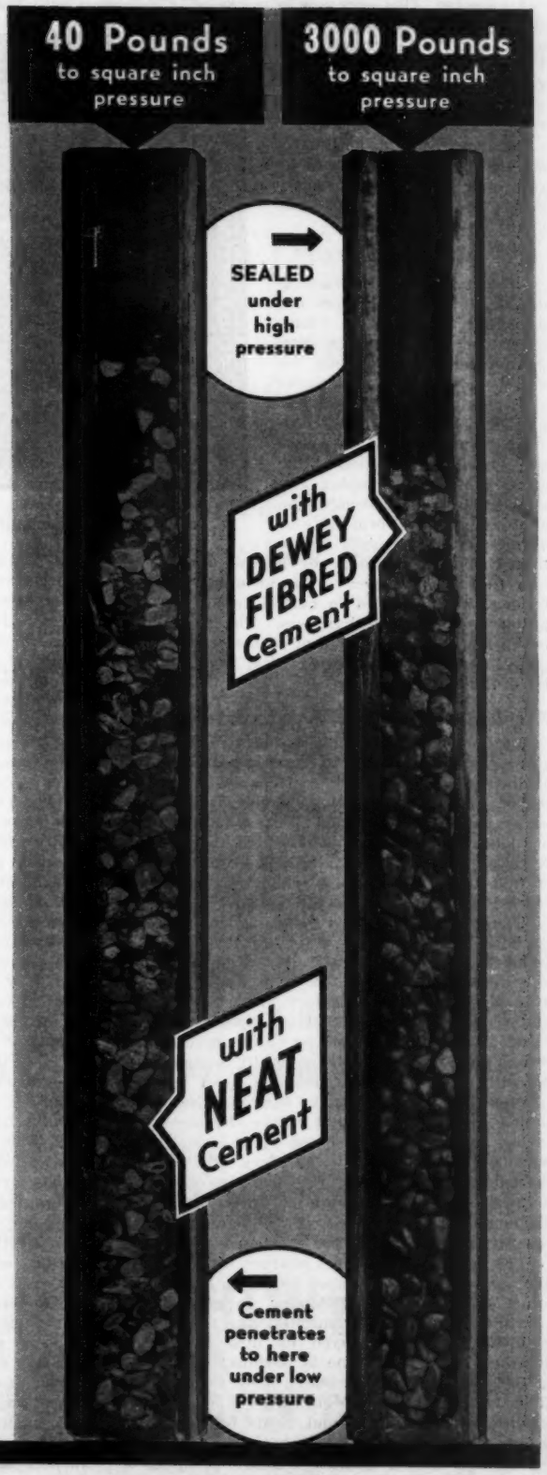

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will bring out clearly the very considerable importance of the volatility of the oil in service. It has been pointed out that in the combustion chamber the oil is exposed to a temperature high enough to vaporize and crack any known hydrocarbon. Normally the lubricant is spread in a thin film over a relatively large surface, so that the conditions for vaporization are favorable. If the boiling range of the oil is sufficiently low, the recurrent flame will vaporize it away from the metal walls, which can thus remain fairly clean. If on the contrary, the oil is very heavy, with a boiling range above the cracking temperature, the entire oil film may be broiled in place, before it can vaporize. This amounts to a coking in which the oil breaks up, more or less as it does in a pressure still. Lighter hydrocarbons are formed and go off as vapor, while the heavy residue stays behind as a coke film. An oil blend made up of both light and sufficiently heavy materials will lose the light constituents to vapor and coke the heavy ones in place.

Type of Coke

The type of carbonaceous deposit formed under any one set of circumstances is of some importance, and where extraneous influences do not vary too much, the type of coke shows a fair relation to the oil employed. The wet or dry character of a coke will depend largely on the operation of the engine as to oil pumping and temperature; but assuming an approximately uniform state of dryness (such as might be obtained in the laboratory by heating for a given time to a given temperature in an oven) some differences can be noted in carbon texture, specific gravity, density and hardness. The relation between kind of oil and kind of carbon is purely empirical but not inconsistent with facts from related fields.

Application of Above Ideas to Oils in Engine

Before applying the above ideas to actual engine service it should be emphasized that each engine is an individual problem, with its own set of conditions, and that results are likely to be as variable as for gasoline mileage. Not only is each engine different, but each is handled differently, so that the sometimes distressing failure of well-founded technical principles to show up in service is not to be wondered at.

The general principles governing engine deposits have been discussed in the excellent paper by Bahlke, Barnard, Eisinger and FitzSimons (J. Soc. Automotive Engrs., 29, 215 (1931)) and in a review from our laboratory (Am. Soc. Testing Materials Symposium on Motor Lubricants, New York, March, 1933). It seems hardly necessary to repeat them in detail. It is generally accepted that deposits decrease as the running head temperature of the engine rises; the familiar observation that a long, hard run will reduce the amount of carbon in an engine is based on this fact. It is obvious that increases of the load will increase the temperature, and that this may also occur with increase of speed. Temperature is the basic condition and whatever raises it will reduce deposits, other conditions remaining the same.

The influence of air-fuel mixture ratio has been discussed briefly above, as has also the significance of good fuel distribution. In general rich mixtures and bad distribution make for a dirty condition. The role played by dust in the air breathed in by an engine is obvious; with hard-surfaced roads it has become a more or less negligible factor, but has been renewed by drought conditions, dust storms and roads broken up by severe winter weather.

The fact that a cylinder which is pumping oil will usually have a heavy carbon deposit is well recognized, as is also the influence of tighter rings in reducing deposits. The decreasing importance of carbon as a source of trouble from 1928 to 1933 was due to a constant improvement in design and fit of piston rings and to the use of more viscous oils which did not get past the rings in any great amount. In making engines of low oil consumption, the manufacturers also made engines which did not pick up much carbon. Our experiments of some years back supported the idea that as long as carbon is forming, the amount will be roughly proportional to the oil passing into the combustion space, provided no large excess of oil is flowing upwards. After carbon stops building up, the consumption will be of no great significance. If more oil comes up than can stick to the metal walls, the consumption will have no meaning either. Bahlke, etc., reported a case of this sort, in which carbon deposit did not change much with a change of over 100 per cent in oil used. It seems likely that all their experiments were in the range of excess oil.

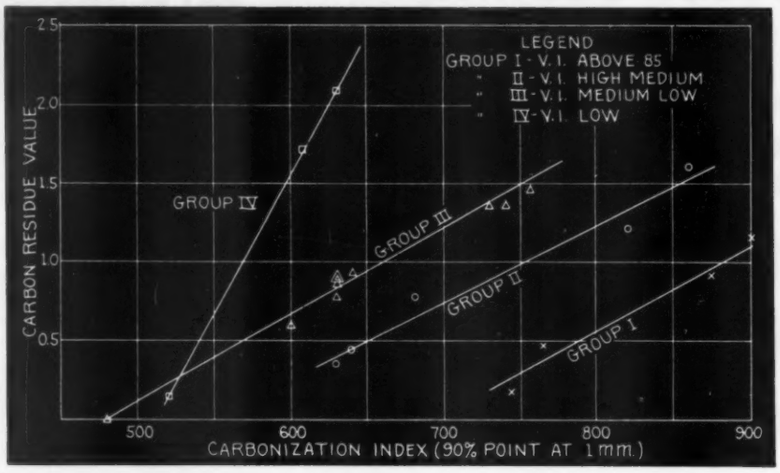

Fig. 2—Relation between carbon residue and carbonization index

It is implied above that carbon does not continue to build up indefinitely, but reaches some point of approximate constancy. A moment's thought will show that this must be so. Experiments have shown that at the beginning, coke builds up rapidly. If this rate continued, the combustion space would soon be choked and so reduced in size that definite power loss would be noted. Just how real a constancy occurs is not known. The engine will probably tolerate more or less deposit with varying conditions; more in winter for instance. Thus a sort of floating equilibrium is probably set up. This condition has been recognized and discussed by Brooks (J. Soc. Automotive Engrs., 18, 48 (1926)) by Thornycroft and Barton (Aircraft Engineering, 2, 36, 109, 212, 262 (1930)) and by Bahlke, etc., (loc. cit.) It is probably not caused exclusively by the mechanism suggested by Bahlke who supposes that after an insulating coke layer gets to a certain thickness, the oil on the inner surface is hot enough to vaporize cleanly. Since none except very light volatile oils could be expected to vaporize cleanly under engine conditions, it is more probable that after a deposit gets to a critical thickness, it begins to burn a little and to chip and scale off a good deal. The appearance of hard carbon surfaces in dismantled engine heads supports this view.

The actual mechanism by which coke forms in the combustion chamber is of course familiar to everyone. Any known oil exposed to gasoline flames will either vaporize or decompose. If the boiling range is low enough the oil can vaporize away; if an engine could be lubricated permanently with kerosene it would probably stay clean. If the oil or some part of it boils too high to vaporize away, then the high boiling material will stay on the surfaces and undergo the familiar coking process. (The part of the oil which comes off as vapor—either by boiling or by cracking—will presumably burn with the gasoline mixture). One layer of coke-like material can be built over another in this way, so that the formation of a deposit can easily be pictured. If an oil, because of its origin, degree of refining or previous use, is high in resins and asphaltenes, these will end up in the coke deposit, increasing the amount from a given consumption of oil. If the oil is high in hydrocarbons of the polyaromatic type which are blamed for coke deposits in cracking stills, these will also serve to increase the deposit from a given amount of oil. Dust drawn into the cylinders with the intake air will have a good opportunity to adhere to the sticky surfaces and be incorporated with the deposit. This goes on until the carbon tolerance is reached, as discussed above, and then the deposit varies with the conditions. It becomes heavier in cool weather and light running, and is reduced by a summer trip. In any case, the main deposit stays put and is exposed to surface scorching about a thousand times a minute. It is no wonder that in some cases a dense flinty layer is built up which adheres so tightly that it can hardly be scraped without taking some of the metal with it.

Tests for Carbon Depositing Tendency

The obvious point to which the above discussion leads is that we wish to be able to predict how any one oil will behave as to deposits when used in a motor. This calls for a discussion of laboratory tests. There are three types and each group has its proponents.

Coking Tests

These include the Conradson residue test and the Ramsbottom test. In the first a sample of oil is coked in a porcelain crucible in the absence of air, and in the latter a small glass vessel containing oil is heated in a molten metal bath. The Ramsbottom may offer better reproducibility and control, but the tests are the same in principle and should give similar indications.

Oxidation Tests

It is probable that oxidation tests have not been offered as direct indicators of engine carbon deposits, except for the Waters carbonization test (Ind. Eng. Chem., 3, 233, 812 (1911); 8, 587 (1916)); this was rather early and before the matter was as well analyzed as now. The tests are of such direct interest in the general situation, however, that they should be included in the discussion. They may be listed as follows:

(a) Waters carbonization test. In this procedure 10 grams of oil were heated in a flask open to the air at 250° C. (482° F.) for three or five hours and naphtha-insoluble asphaltenes measured.

(b) Sligh oxidation test. (Proc. Am. Soc. Testing Materials, 27, I, 461 (1927)). This involves heating a 10-gram sample of oil in a small glass stoppered flask in an atmosphere of oxygen at 200° C. (392° F.) for two and one-half hours and determining naphtha-insoluble asphaltenes. The supply of oxygen is thus limited.

(c) British Air Ministry oxidation test. (Garner, Kelley and Taylor, World Petroleum Congress II, 448, (1933)). Here a 40 cc. sample of oil is heated in a glass tube for two periods of six hours each on successive days, while air is passed through at the rate of 15 liters per hour. The temperature is maintained at 200° C. and at the end of the test, the viscosity at 100° F. and the Ramsbottom coke value are observed.

(d) Indiana oxidation test. (Ind. Eng. Chem., Anal. Ed., 6, 419 (1934)). This involves passing a current of air at the rate of 10 liters per hour through a 300 cc. sample of oil maintained at 341° F. Samples are withdrawn for naphtha-insoluble, viscosity and other figures. A formation of 10 mg. of asphaltenes per 10 grams of oil gives the time of beginning of sludge formation and an amount of 100 mg. per 10 grams gives an arbitrary sludging time.

(e) Oxygen absorption tests. (Dornte, Ind. Eng. Chem., 28, 26 (1936)). In these tests a small sample of oil, maintained at 150° C. (302° F.) is submitted to a circulating stream of oxygen from which carbon dioxide and water vapor are removed continuously, and the amount of oxygen

absorbed by the oil is measured. These procedures have not been standardized.

Distillation Tests

These have not been standardized. Distillations at 10 mm. and 2 mm. were used by the authors as early as 1926 (J. Soc. Automotive Engrs., 18, 607, (1926); 25, 489 (1929)), for comparison of oils of different carbon depositing characteristics, and a definite procedure has been suggested by Bahlke, etc. (J. Soc. Automotive Engrs., 29, 215, (1934)). According to this outline a complete distillation is made at 1 mm. pressure and the 90 per cent temperature is regarded as indicative of the tendency to deposit carbon.

Correlation of Tests With Experience

The history of experimental work on carbon deposits can be boiled down to a statement that there are two classes of results:

(a) Those which support coking tests;

(b) Those which do not support coking tests. Among the latter the most important because the most constructive, is that by Bahlke, etc., in which vacuum distillation at 1 mm. pressure is recommended, with choice of the 90 per cent temperature as most indicative. Bahlke sets up a fairly good correlation of deposits with 90 per cent temperature. He is particularly successful in correlating deposits from water-white oils and petrolatum wax, which have very low carbon residue values, but do form carbon.

Of the tests which support coking, the first and best agreeing are those from our own laboratory (J. Soc. Automotive Engr., 18, 607, (1926); 20, 688 (1927); 25, 489 (1929)). Confirming conclusions have been drawn by:

Marshall and Barton (J. Soc. Chem. Ind., 46, 130 T, (1927)).

Junosza, Piotrowski and Winkler (Przemysl Chem. 12, 573 (1928)).

Basset (J. Soc. Chem. Ind., 50, 527 (1931)).

Philippovich (Petroleum Z., 28, 49, 10 (1932)).

Emphatic disagreement is offered, in addition to that of Bahlke, etc., mentioned above, by Chernojookov (Ind. Eng. Chem., 21, 315, (1929); Neftyanoe Khozyaistvo, 24, 234 (1933); Formanek Chem. Obzor. 8, 169, 189 (1933); Ehlers (Petroleum Z., 29, 19 (1933)).

Discussion of this disagreement is somewhat academic until further analysis is made of the situation. Quoting from an earlier paper (Am. Soc. Testing Materials Symposium on Motor Lubricants, 1933) we consider that engine deposits will depend on three factors:

(a) The amount of residue non-volatile at the prevailing temperature.

(b) The amount of coke formed from this residue.

(c) The degree of adherence of this coke.

Keeping these points in mind, we may attend for a moment to the fact that all the tests so far considered are as applied to the new oil. The used oil at the end of the test period or use period offers, of course, quite a different story. Assuming for a moment that a coking test gives the correct indication, then what is needed would seem to be a sort of mean or averaged coke value for the entire period, since we know fairly well that the coke value figures increase as an oil is used. It is not entirely certain, however, that this is really correct. Most decomposing influences, of which oxidation is the chief, are likely to show an auto-catalytic type of curve, the products accelerating the process and the whole thing moving faster as time goes on. In other words, for certain types of deterioration, an oil is not so bad during the first half or two-thirds of its life. But it is during the earlier part of an engine test period that carbon is most rapidly formed; later on the floating equilibrium phenomenon sets in and not so much happens. In actual engine practice also new oil is added at intervals and at somewhat longer intervals the whole is changed. So perhaps the properties of a new oil are more important than might at first appear.

To come back to the factors governing deposits just mentioned, it is obvious that the amount of residue not volatile at head temperatures is purely a matter of boiling point. In addition to such material in the original oil which is high boiling, solid or resinous, the residue will include accumulations due to service, such as resins and asphal-

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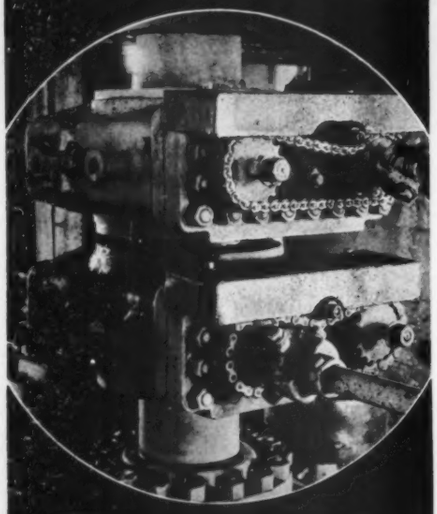

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tenes from oxidation, coke and tarry material from cracking, and solids from dust.

The amount of coke formed from the evaporation residue will obviously depend on the nature and make-up of the residue. There is nothing much to be done about inorganic dust. It will persist in the deposit no matter what happens. Asphaltenes and resins, we know, decompose easily to solids, so that these normal oxidation products will contribute to the coke. Following Sachanov, any true polyaromatic compounds in the oil will decompose fairly readily to a copious yield of carbon. And finally even many paraffinic oils contain small proportions of very high-boiling materials, which, because they are so high boiling, will stay in the hot zone until they are reduced to a solid material. By analogy with some observations of pressure still operation, it might be expected that a little more coke could be anticipated from oils related to the aromatic types. Since naphthenic products give a close approach to the aromatics because of their content of polynaphthenes, it might be expected that naphthenic oils would coke up an engine more rapidly than paraffinic oils.

Now it is a matter of general observation, no matter to what school the observer belongs, that naphthenic oils leave less engine coke than do paraffinic oils. We are, therefore, prompted to examine the third major influence, which is the nature of the coke formed by different types of oil.

Here we are on purely empirical ground. It is again a matter of general observation that paraffinic oils form a hard adherent carbon and that naphthenic oils form a soft fluffy carbon. From this it is an easy step to the thought that perhaps from the chemistry of the matter we might suppose that a naphthenic oil, being close to an aromatic, forms much coke, but this coke does not stick. It must be assumed that it blows out with the exhaust gases. The idea is not a new one. It was suggested by W. F. Parish in 1920. Of course there is always the distinction that perhaps the naphthenic carbon is formed, not on the metal surfaces, but in the gas space, because the oils, being so volatile, evaporate off before they have time to undergo the cracking reaction.

If the coke forms from naphthenic oils but blows away, it should be possible to establish its presence in the exhaust gas and to differentiate radically divergent oils. In the early stages of our work we devoted a good deal of time to attempts to get results with spot filters, estimating the soot content of a gas by the intensity of a stain. The experimental difficulties are great and we had to give it up. One of the reasons lies in the fact that for a typical experimental run, only about 0.0001 gram of oil was consumed per explosion.

Further thought on the subject emphasizes the influence of the character of the carbon formed on the ultimate result in terms of deposits. A naphthenic carbon is dry and powdery because the oil has evaporated away and no binder remains to consolidate it. A paraffinic carbon tends to be more dense and hard. The oil has remained long enough so that some of it stews to an asphaltic binder. The difference is something like that between a dried loam mud which is fragile and a dried clay mud which is very hard. The difference is believed to be inherent in the nature of the oils. For a given viscosity the paraffinic oil has an appreciably higher boiling point because it has a much higher molecular weight. Thus a viscous naphthenic oil, 165 at 210, will have a molecular weight of 500 and a corresponding Pennsylvania bright stock will show about 700.

To come back to the question of tests, we can put down the three factors listed above as influencing deposits, and mark yes or no for the coking tests or the volatility tests as we think they are significant for each factor. We get this:

	Coking test	Vol. tests
Amount of non-volatile residue.....	no	yes
Coke yield from residue	yes	no
Adherent nature of coke	no	no

It can be seen that neither type of test will give even two factors. We are driven to the conclusion that neither type of test is fundamentally very sound. They each bear some relation to what goes on in an engine and each is empirically related to the third factor, the nature of the coke. Thus it would seem that both tests owe their partial measure of success to what might be characterized as luck. It is really, of course, the good judgment of the men who devised the tests.

At present, one type of test can be corrected by the results of the other. A drastically refined paraffinic oil will give less deposit than will be predicted from its boiling range, and a moderately refined naphthenic oil gives less than is predictable from its coking value. This sort of thing is particularly noticeable in dealing with the synthetic and semi-synthetic oils. Some of these give less than indicated by the boiling range and more than indicated by the coking value. We hope ultimately to be able to iron this out by taking into account other factors, such as the viscosity index

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of the oil. That such relation is possible is shown by Figure 2. This gives a classification of the oils used by Bahlke, etc., on the basis of viscosity index, with the 90 per cent temperature (what they call carbonization index) plotted against carbon residue value. This was worked out by E. B. Hjerpe of this laboratory. By making slightly liberal interpretation in 3 cases out of 23, we get quite good agreement. Further study is under way on this subject.

A few words should be said on the subject of crankcase deterioration and its influence on deposits. When it is remembered that asphalt is made by air-blowing of oils at temperatures ranging up to 650° F., it can be seen that an engine is, in a small way, an asphalt producing outfit. The oil is oxidized by air and it is heated to temperatures which, in spots at least, are not far from the asphalt making range. As refiners we do our best to give the engine a poor stock for asphalt making and the net result, from the operating standpoint, is very good.

Coming to the modern high speed diesel engine, not much can be said because not much is known. In those types which use a precombustion chamber, the heat rejected to cooling water is quite high, which probably means that engine head temperatures are a little higher. So far this is favorable. But there is much more chance for incomplete burning of fuel to form soot, and there is the same chance to oxidize the oil in the crankcase through drastic ventilation. In general the carbon problems are similar to those in gasoline engines.

The exact significance of carbon in present day engines, both gasoline and diesel, deserves comment. A 1927 engine had to have carbon scraped every 5,000 miles. The freedom from trouble in the meantime has largely been due to small consumption of heavy oils. But now lighter oils are again in fashion, and we have higher compression engines. It is not unusual to have carbon knocking in light cars at 6,000 to 8,000 miles. To get rid of it we switch to premium gasoline or work the octane selector. But neither of these remedies is economical. High compression heads are so sensitive to small changes in head clearance that the new hard gaskets have come into the picture to insure accurate head position. The new automotive diesels have compression ratios of from 14 to 17:1, and some of the engines at this year's Indianapolis races are described as having piston clearances of the order of 0.02 inch. This means precision work, and a thin layer of carbon can raise a good deal of trouble. It may be that soon we will realize the importance of carbon deposits in offering one of the main obstacles which stand between us and the advantages of high compression engines.

INTERNATIONAL FIRST AID CHAMPIONS

Pipe department team of the Magnolia Petroleum Co. refinery, Beaumont, Tex., which won the gold medal at the first aid contest during the International Petroleum Exposition in Tulsa. The crew included H. M. Guilett, C. J. Partin, John Cain, G. L. Linscomb, Manuel Coate and H. E. Crawford. Coaches: W. H. B. Fehl and C. M. Liles. Photograph of the wax and lube department team of the Magnolia was published May 28 by error of photographer.

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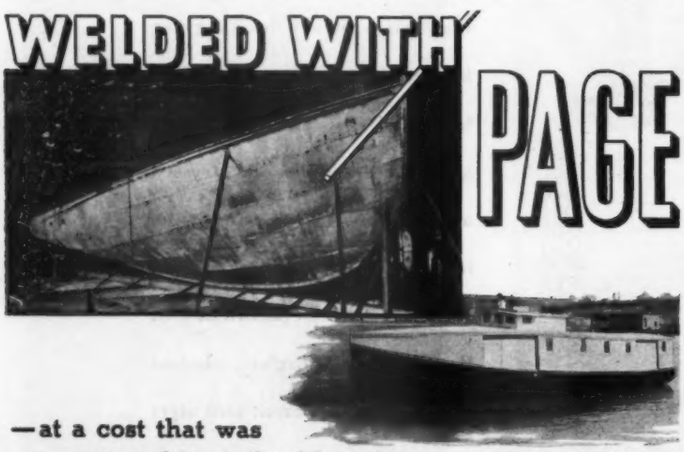

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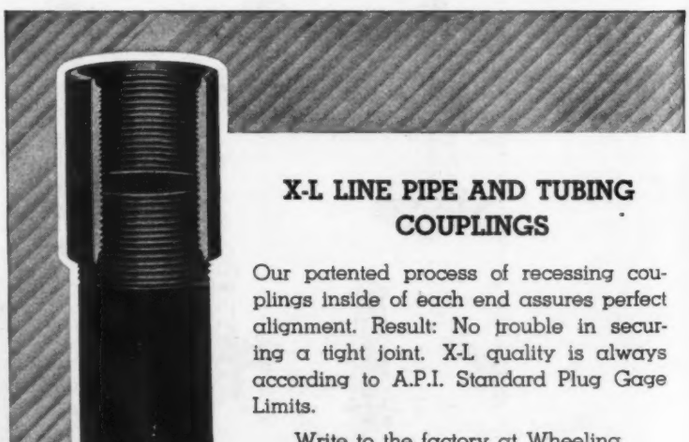

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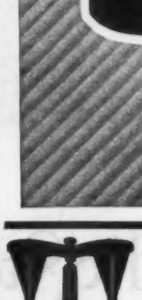

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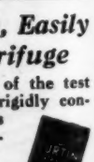

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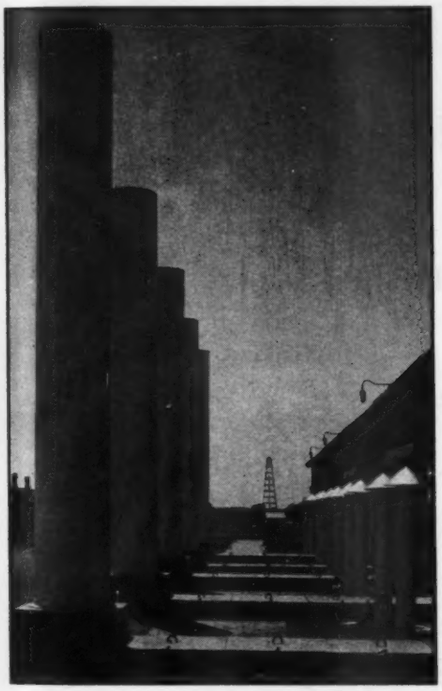
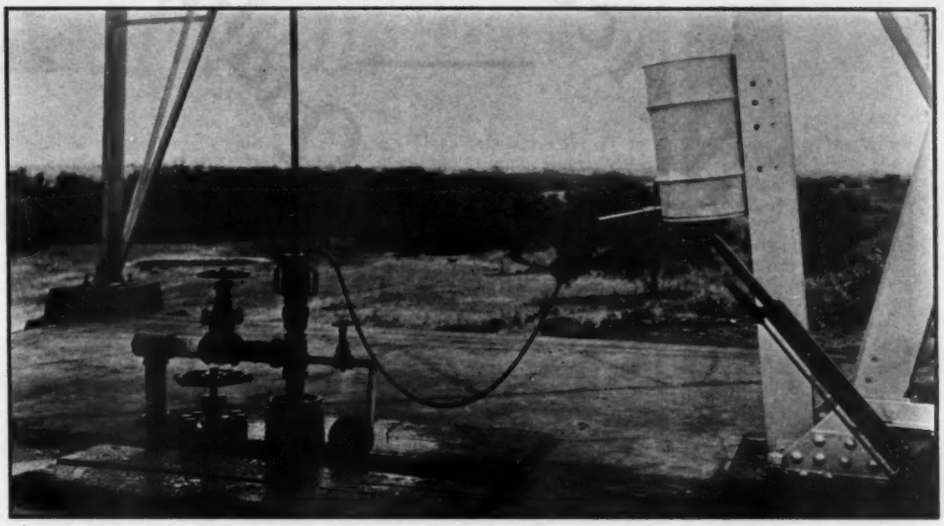
OPERATING IDEAS

Air Cooled Exhausts

A major oil company operating a gasoline plant in the Rainbow Bend field of Kansas has designed an air cooled exhausting system which has proved to be very effective in cooling the outer shell of the exhausts to a temperature where it is no longer difficult to keep any normal paint on the shell. The exhausting system also has been very effective in reducing the temperature of the engine room due to the strong draft created by the exhaust. The system consists of combining the exhausts from the twin-cylinder, 165 h.p. engines in the engine room and welding them into a 10-inch line. This line was submerged 30 inches under the floor and covered with steel plates thus allowing



a large amount of air space around the exhaust pipe. Outside the building a 30x30-inch cement box extending 18 feet from the engine room wall was constructed to conduct the pipe to the base of the stack, the conduit being covered with cement blocks to allow easy access to the pipe. Finally the 10-inch pipe was suspended in the 30-inch stack by means of eye-bolts thus allowing sufficient cooling space between the exhaust and stack, the stack being 18 feet in length and the pipe extending but 12 feet into the stack. A draft is created by the height of the stack and the difference in temperature of the intake and exhaust ends of the system thus causing an even flow of air along the sides of the exhaust pipe. A 2-inch space is provided around the intake end of the exhaust through which the air in the engine room is sucked; thus ventilating the engine room.



Water Cooling Used for Stuffing Box Rubbers

A number of the pumping wells in the Lucien field produce enough gas to flow the oil out of the tubing from time to time. Then before the oil is pumped up to the top again the stuffing box rubbers are often burned out, due to the friction caused by the uncooled and unlubricated polished rod. When the oil is pumped up considerable of it is sometimes sprayed out through the leaky stuffing box before new rubbers can be installed. The accompanying photograph shows a simple solution of the problem. A small stream of water is allowed to flow into the stuffing box from a drum suspended above the derrick floor. About 5 gallons of water is sufficient to cool stuffing box rubbers for a period of a day or longer.

Extension to Drill Pipe Tongs

In some of the deep tests in Oklahoma, when the well is drilling at a depth greater than 5,000 feet, it is difficult to stack pipe in the small space between the rotary table and the drawworks without interfering with the wrench line to the drawworks. The accompanying picture shows a 12-inch extension bolted to the tongs, which throws the wrench line clear of the stacked pipe and allows more room, and more leverage.

Cover for Rod Line Pendulum

One company in the Naval Reserve field, Osage County, Okla. has installed very neat sheet iron coverings on all its rod line pendulums at road crossings to prevent children or small animals from becoming entangled. The covering is of welded construction with space being cut in the apex to allow for a full stroke of the pendulum. Not only is the covering valuable in preventing injuries but it also serves to prevent any trash or materials from entering the conduit.

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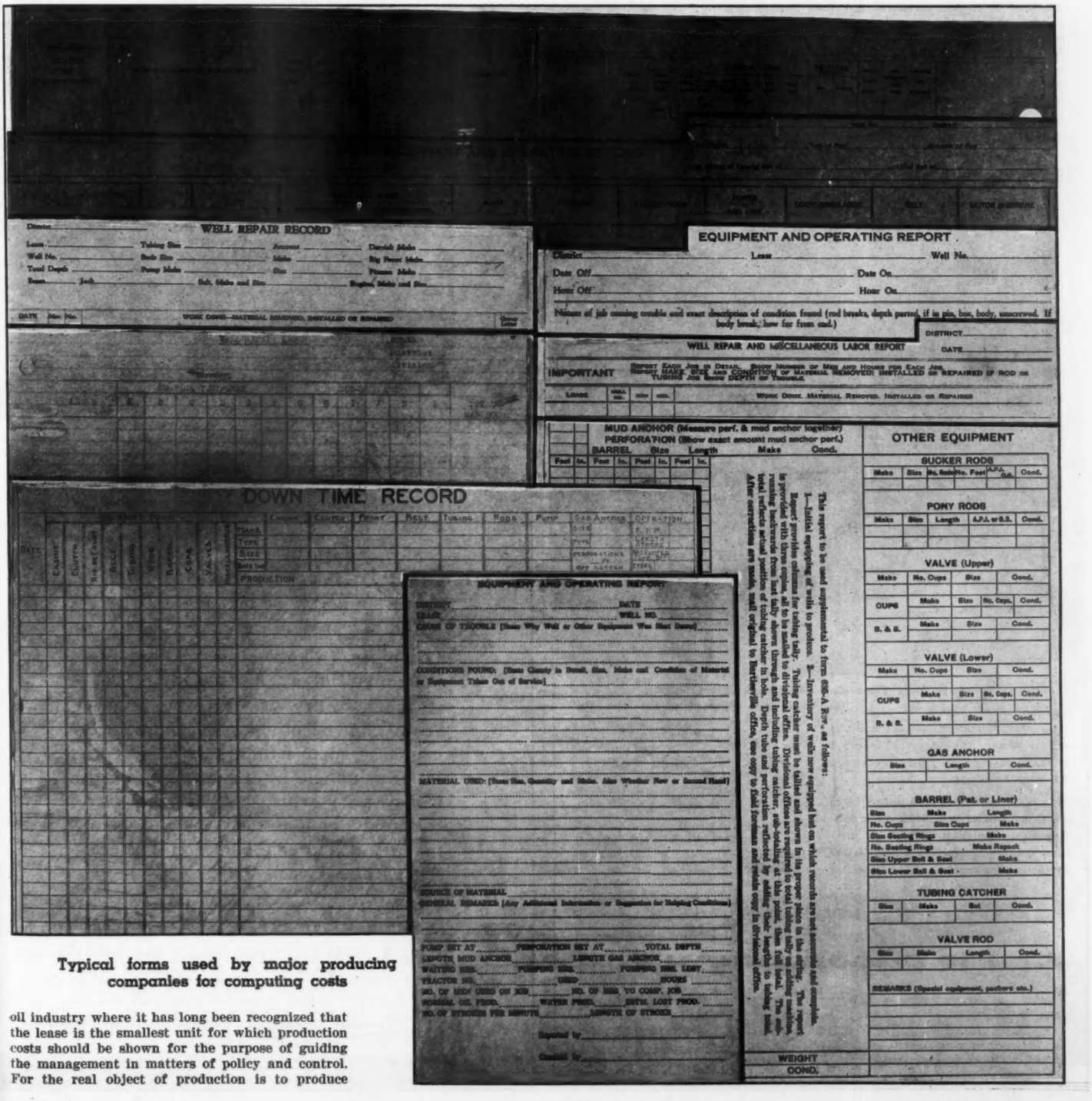
Keeping Track of Pumping Expense On Individual Wells

By PAUL REED

Within the last year or so, protests have been heard that certain engineers in production departments are making unreasonable demands for figures showing the cost of operating individual wells which they desire in addition to the figures on lease lifting costs which are regularly furnished by their accounting departments. This demand does not imply a need for departure from the established accounting practice in the oil industry where it has long been recognized that the lease is the smallest unit for which production costs should be shown for the purpose of guiding the management in matters of policy and control. For the real object of production is to produce from the whole lease as many barrels of oil as commercially practicable. And in the attempt to keep down overhead, excessive detail is to be avoided and moderate itemization aimed at.

Furthermore, a capable production man is expected to locate trouble and correct it by his first hand acquaintance with conditions. The general situation, existing on the properties over which he has charge, it is asserted, is carried in his head anyway. And it is said that he can run down trouble quickly enough whenever lease lifting costs rise suddenly in a way that seems unwarrantable.

However, owing to several reasons, one of which is the introduction of improvements in production methods, a demand persists, in certain quarters, for data which will throw light on the cost of operating individual wells, particularly in deep territory. In the past year it has been ob-



Typical forms used by major producing companies for computing costs

served that there are cases where large companies, which had quit keeping individual well records years ago, have recently returned to this practice. And what is more, they have even been making systematic estimates of what it is costing other companies to operate individual wells in the vicinity of some of their properties.

Still the routine compilation of operating data for each well is far from being a general practice. In fact, it cannot be said that there is any uniformity even between companies which are agreed upon the value of this data and the general procedure to be followed in acquiring it. A comparison shows that companies differ more in the way they keep their production records than they do in the way they drill their wells.

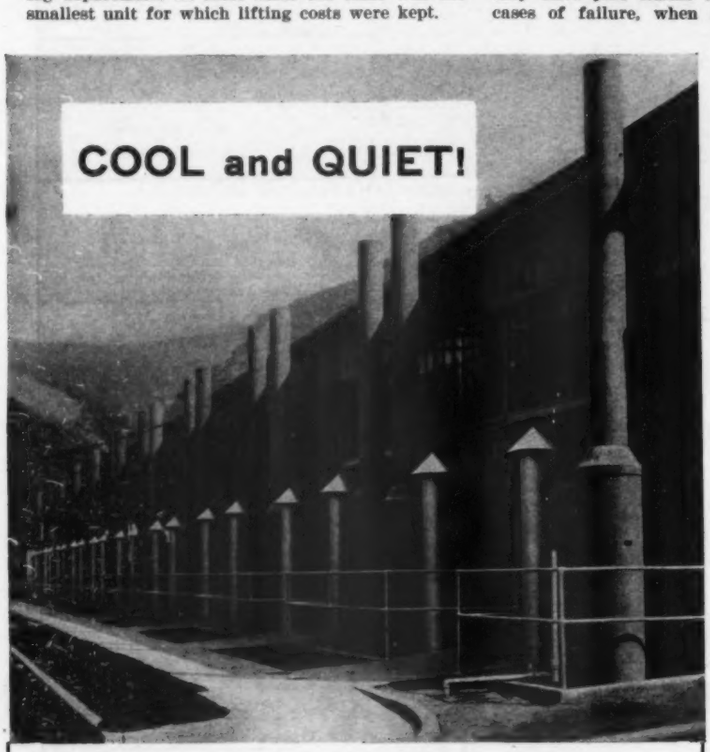
An examination of the procedure of several companies operating from 500 to 5,000 wells, ranging from the shallow strippers to the deepest wells, showed that in some companies, in addition to the cost figures furnished by the accounting department, cost of operating individual wells was kept track of by a part of the staff of the engineering section of the production department as a matter of routine. In these instances there did not appear to be duplication. In other cases itemization of costs per well was carried on solely in the accounting department. In most cases the lease was the smallest unit for which lifting costs were kept.

In some companies where the cost of operating individual wells is compiled in the engineering section of the production department, records for each well are kept up to date in the central office from data furnished by the daily reports sent in by pumpers and roustabout foremen whenever work is done on a well. This report is sent in on a form sheet—one sheet for each well worked on during the day; data furnished consists of: nature of the work, material furnished, down time, labor involved, and any changes made in the well. In other companies notations on the daily gauge reports may show this information in an abbreviated form. Still other companies have all such details handled by district superintendents who adopt such methods as their problems seem to require. In certain cases where the district superintendents are solely responsible for all details, the only reports from leases to the central office are the monthly oil and water reports which give estimated oil and water production for each well and a notation if any wells have been hung up during the whole month.

Often companies keeping complete individual well data have come to this practice as an extension of the records of pumps, rods, ignitions, belts, etc., kept for the purpose of ascertaining whether they have just claims against manufacturers in cases of failure, when it is desirable to check guarantees. The complete individual well records serve as a guide in determining the value of different types and makes of equipment at times when decisions are being made regarding future purchases. Another by-product of these records is their worth in indicating how improvements may be made in equipment. Data of use in this connection is furnished to interested manufacturers.

Although these individual well records were commenced originally to serve as a means of checking the value of different equipment, they have come to be recognized as frequently a useful means of spotting certain instances of recurrent trouble, the importance of which had not been apparent to the district superintendent. These cases are often minor matters in themselves. For example, the attention of a superintendent is called to the cost of lost production at an isolated lease where there had been repeated rod line breaks because the rod line needed to be straightened at a point where a post had been set out of line. He had put off attending to this from week to week as it had seemed to make little difference provided he got around to it eventually.

The value of having a pumper living on a lease, which theoretically might be handled by a pumper on an adjoining lease, is indicated by records of repairs to clutches, engines, etc., made by the pumper himself.



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Where individual well cost records are kept directly under the supervision of production engineers in the central office, it has been observed that data coming in every day from the field is entered in a book which contains a separate sheet or page for each well. This individual well record is known by such names as "down time and well repair record," "well trouble record," or "well equipment and operating record." Clerical expense involved is charged to the production engineering department and not to the accounting department. However, in other companies itemized accounts of the cost of operating individual wells are kept by the accounting department, but of course without the operating data which engineering departments also include in their records.

In the operating records of individual wells kept under the supervision of production engineers, no attempt is made to allocate general lease expense (such as pumper's wages, waste, lubricating oil, etc.), to individual wells.

Although the form of the sheet or the page carrying the operating data for individual wells may be somewhat different in different companies, even where the general method is substantially the same, still it may be possible to give an idea of what these record sheets look like by making up a composite list of items which would include the principal features of several systems. Such a composite list is given without presuming that it is comprehensive.

At the top of such a composite form, there belongs general descriptive data, such as:

Lease:	Well No.:	District:
Oil:	Water:	Strokes per minute: Length of stroke:
Rig Front:	Pump:	Rods: Tubing:

Below this the page would be divided to show when and where work was done on the well. After the column to show the date would come columns for various classifications beginning with:

Surface Equipment	
Engine or motor:	Belt or chain
Clutch or countershaft:	

There would also be columns to show whether trouble had been caused by:

Power or rod line:	Paraffin, sand, gyp:	
Sucker rods:	Pump:	Traveling valve
Tubing:		Standing valve

There would be space to show whether the work done on the well had been done in the course of:

Flowing, agitating, gas lift, or swabbing:

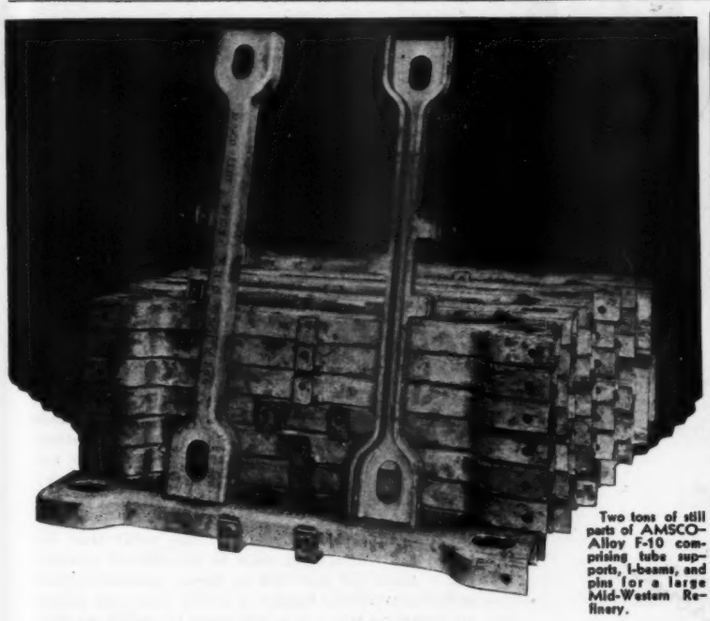
Other data provided for would be:

Pumping time lost:	Condition of equipment:
Production lost (est.):	Material installed:
Labor hours:	Remarks:
Tractor hours:	

In addition to this the record form may or may not include the cost of labor and material and the total cost of the whole job, depending upon the policy of different companies.

The information is either written out clearly so that anyone examining the sheet can tell the operating history of the equipment in the well or the data might be recorded in an abbreviated form by the use of symbols which require little space, but which can only be interpreted by someone familiar with the system.

In order to increase the effectiveness of these records, it has been found advantageous by some to have duplicates of these well record sheets kept in the district superintendent's office, where the clerk has instructions to call the superintendent's attention to excessive repetition of trouble as well as to unusual increases in trouble. If this is not corrected or explained, the central office is likely to ask for the reason. These records have been useful in pointing out trouble which sometimes escapes the notice of the superintendent and may not show



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up immediately in increased lifting costs owing to favorable conditions in other parts of the lease.

Those who criticize these records as being too expensive, believe that it is better to use the money spent on supervision to pay capable experienced superintendents rather than to divide it between them and an additional office force which may be tabulating a considerable amount of information which is actually unreliable in many cases, owing to omissions and inaccuracies of pumpers who are hired primarily to get the job done and not for their clerical ability or their fine spencerian handwriting. It is true that this criticism touches the most serious difficulty in keeping these records. But it is said that during the course of using this system the dependability of field reports has been increased and the percentage of errors has become smaller.

Instead of tabulating daily field data on a sheet or a page for each well, in certain organizations there is a practice of entering this on a sheet for each lease, and then tracking down trouble at the end of the month through a summary which is gotten up to show the percentage of down time for each well.

In other companies, the accounting department, either as a matter of routine or by request, furnishes the production department with a "breakdown" of expenses of each well at the end of the month for those leases where lifting costs have suddenly increased. After receiving this itemized data, the superintendent either keeps a day by day detailed record of the particular wells he is watching until the trouble is stopped or he keeps track of the situation in whatever way suits him.

Another criticism leveled at individual well operating records is that data on the small stripper wells would be burdensome to acquire and of doubtful significance, since the loss from shutdown of any one of these wells is small. In some companies, operating records of individual wells are not kept after production falls below a certain point. However, production engineers who have installed the most comprehensive systems in their offices use these to record individual well data for all wells operated by the company. The expense of a complete record system does not appear to be large, at least not as large as would be anticipated.

Under conditions which have developed in the last few years, it seems that more is given to the analyses of certain mechanical problems connected with production, and as a consequence the practice of keeping track of individual wells has been given an impetus. Deeper wells, more expensive equipment and differences in equipment due to recent innovations and improvements have been factors, especially where different types of equipment have been used on the same lease.

Owing to the greater expense of equipping deep wells, it is more important to determine matters of general policy from the most exact data. In these problems there is the question of whether obsolescence is likely to be a more important item in charging off equipment than depreciation, owing to the likelihood of marked mechanical improvements in the near future. There is also the matter of accounting for higher lifting costs and decreased production as a result of mechanical failures of fairly new equipment in localities where it has not been possible to attribute a decline to reservoir conditions.

As for the companies operating wells which fall in between the deepest producers and the shallowest strippers, it may be observed that differences in attitude toward well operating data divides on the point of whether these records can bring to light an important amount of trouble which would not be apparent to a good production man. There is also the question, which is no doubt of more significance, and that is whether a man relying entirely on his own observation and memory can evaluate equipment and practices more accurately than a man with equally good judgment who has the assistance of detailed records.

There is also the matter of scrutinizing closely practices which have continued with the momentum of custom and which may possibly be done away with and replaced by new methods.

The value of any system, of course, depends on how much it helps a man in dealing with problems, for the system by itself does not think. Methods which help one organization may impede another. It has even been noticed that some engineers are even going so far as to keep averages of cost per well per day in addition to other lifting cost figures.

Something also is made of the point that detailed individual well data is capable of furnishing a basis for arriving at broad generalizations which may be the means of saving time and money on occasions when it is advisable to adjust production policy to changed conditions coming about either through curtailment, the lifting of proration, or an increase in the price of crude.

Insulating Oil Corrosion

The corrosion of metals by insulating oils has been investigated by P. J. Haringhuizen and D. A. Was at Utrecht and described in Technical Publication Series A, No. 35 of the International Tin Research and Development Council. By volatilizing tin, lead and copper from tungsten filaments in vacuo, extremely thin films of each metal were deposited upon squares of mirror glass. The thickness of each film was found to relate to the amount of light transmitted. This relationship allowed the thinning of the films due to corrosion in insulating oils to be determined.

From the experiments it is concluded that the metals build up a protective film of reaction products on their surfaces. In the case of copper this film is continuously destroyed, but tin and lead have a durable resistant film and the diffusion through this film controls the corrosion. Experiments with different oils showed that the velocity of corrosion is not related to the concentration of the acids formed by the deterioration of the oils. The results have been expressed by an experimental formula, for which an attempt is made to provide a theoretical basis.

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World's Largest Producer of Electric Furnace Steel

TIMKEN STEEL TUBES

ELECTRIC FURNACE AND OPEN HEARTH • ALL STANDARD AND SPECIAL ANALYSES

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Ratio of Price of Crude Oil to the Tankcar Price of Gasoline

Would you kindly inform me if there is a definite ratio which can be applied to the price of 36 gravity crude oil to ascertain what the price of Group 3 Gasoline should be relative to the price of the crude oil?—F. B. E.

A definite relation between the price to be paid for crude petroleum and the tankcar price of U. S. Motor gasoline was included in a proposed article to be known as Article 3, Section 6 of the petroleum industry code. The same relation might serve for finding the price of gasoline by dividing the price of oil by the constant mentioned below.

A part of the section is quoted:

"Sec. 6. During such period as the production of crude petroleum in any state is within the allocation to that state, as provided in Section 3, Article 3, of this code, it shall be an unfair practice within that state to buy, sell, receive in exchange or otherwise acquire Mid-Continent crude petroleum of 36-36.9 degrees A.P.I. gravity during any calendar month at a price per barrel (to the nearest cent) less than that which will be determined by multiplying the average Group 3 tankcar price per gallon of U. S. Motor gasoline of 60-64 octane rating during the preceding calendar month as ascertained and declared by the federal agency designated by the president, by the constant 18.5. The constant 18.5 represents the relationship, during the period 1928-1932, between the average price per barrel of Mid-Continent crude petroleum of 36-39.9 degrees A.P.I. gravity and the average Group 3 price per gallon of U. S. Motor gasoline of 57-65 octane rating or 58-60 U. S. Motor gasoline. For crude petroleum of lower or higher gravity and/or different quality and/or in different locality, fair and equitable differentials between the price of 36-36.9 degrees Mid-Continent crude petroleum, determined as above prescribed, and the prices quoted for other crude petroleums shall be observed. Each company or individual purchasing crude petroleum shall file a certified copy of its price schedule and subsequent price changes with the Planning and Coordinating Committee.

References: The Oil and Gas Journal, August 24, 1933, page 9; September 21, 1933, page 10.

Core Oil, Its Use, Composition and Inspection Tests

We are very much interested in knowing the ingredients and any other available information about core oil. Also, we would like to know the general procedure in making cores and testing core oils.—E. H. C.

The core is the central or inner part of a mould, or a separate portion of a mould, such as may be required for forming a hole in a casting. Core oils are added to the moulding sand to serve as a binding material, to give greater strength to the baked core and to strengthen the resistance to the absorption of water.

There are several mixtures marketed as core oils. These may be simple mixtures of a mineral oil, usually of the gas oil or non-viscous neutral lubricating oil type, with boiled linseed oil, soy bean oil, etc., or complex preparations containing a number of substances. Casberg and Schubert state: "Most core oils consist of a drying oil, such as linseed, china wood, or perilla oil, used as a base, compounded with some other oil or oils to lower the cost. The cheaper oils which may be used to dilute the basic oil are either semi-drying in nature, such as soy bean oil, or non-drying, such as kerosene. Rosin is also used as a diluent, and a variety of combinations of oils is sometimes used to compound a core oil."

A complex core oil compound may be made by mixing: Naphtha, gallons, 1; gas oil 4; linseed oil 4; tung oil 2; varnish residue 1; manganese black oxide, pounds, 0.6; rosin 40; hydrated lime 1; litharge 1.5.

The investigators mentioned made a careful study of 10 core oils which included the determination of: Specific gravity, ash content, flash and firepoints, saponification numbers, and the iodine values. They concluded that a complete analysis, making use of the standard physical and chemical tests, should be made in order to arrive at a conclusion concerning the quality or grade of a core oil. They also observed:

"The initial tensile strengths of the baked cores made from the 10 oils by standard methods of mixing, ramming, baking time, and baking temperature, were found to be proportional to the saponification and iodine numbers of the core oils, and may be calculated from the following equations:

$$\frac{\text{Tensile strength}}{\text{Saponification number}} = 0.77$$

$$\frac{\text{Tensile strength}}{\text{Iodine number}} = 0.90$$

"The percentage loss in tensile strength of the baked cores made from the 10 oils was found to be proportional to the amount of water absorbed by the cores, and may be calculated from the equation:

$$\frac{\text{Water absorbed by the cores}}{\text{Percentage loss in tensile strength}} = 0.00037$$

"The amount of water absorbed by the baked cores made from the 10 oils varied inversely with the original tensile strength of the cores."

The range of the properties for the oils tested were: Specific gravity 0.932 to 0.965; ash, 0.5 to 1.72 per cent; flash 111° to 298° F.; fire, 145° to 354° F.; saponification No. 108 to 164; iodine No. (Wijs 15 min.) 73 to 140.

References: Casberg and Schubert, Univ. Ills., Eng. Exp. Sta. Bull. No. 221. Same authors, Bull. 235, Soya Bean Oil for Core Oil.

SPECIFICATIONS

ASPHALT FOR ROAD AND PAVEMENT CONSTRUCTION

The materials covered here are intended for use in the construction of bituminous roads and pavements, as required by federal departments.

There are 14 types described, ranging from 40/50 penetration to 120/150, so space does not permit more than mention of the extremes.

Specific gravity	1.000-1.270
Flash min. °F.	347
Softening point, °F.	95-149
Pen. at 77° F., 100 gms., 5 sec.	40-150
Ductility, 77° F. cms. min.	40
Loss at 325° F., 5 hrs. max., per cent	1-3
Bitumen (Sol. in CS_2) min., per cent	65-99.5
Organic insol. max., per cent	0.2
Inorganic insol	1.5-32.0

For the detailed requirements consult SS-A-706, Federal Standard Stock Catalog Sec. 4, Part 5.

Formation of Crude Oil Emulsions and Treatment for Breaking

What is the cause that produces emulsions of crude oil? What is considered to be the best method for breaking such emulsions?—T. C. S.

There are several factors that may contribute to the formation of emulsions of crude oil. The literature contains numerous references to the subject.

Crude oil emulsions are considered to be formed after the oil starts to move from the producing formation. Sometimes the emulsion does not form until the oil reaches the well outlet. These emulsons are of the water-in-oil type. If the water and the oil were pure, such as distilled water and a fully refined hydrocarbon oil, no stable emulsion could be formed; but nearly all crude oils and most oil-well waters contain emulsifiers, so when the oil in the presence of a small quantity of water is agitated, as in moving up through the tubing of the well, the conditions are favorable for the formation of the emulsion. Many petroleums contain asphaltic substances and gums; also, the waters associated with oil hold in solution considerable mineral matter in the form of various salts, especially sodium chloride, calcium and magnesium compounds. All of these are emulsifiers under favorable conditions. The oil has a tendency to dissolve or put into solution these several chemical compounds and it is the combination of these that act as emulsifiers.

The methods applied for the treating of emulsified crude oil are: Heat treatment, addition of chemicals and electricity. All of these are employed and each has its value. Heat treatment may be used alone under some conditions, but is usually a part of whatever process is applied. The addition of chemicals is most extensively followed in the United States.

Just what are the reactions that cause demulsification when minute quantities of chemicals are used, is not completely understood. Van der Minne has suggested that the separation is based on the fact that an emulsifier of a contrary type is introduced and destroys the power of the emulsifier present in the oil. Thus, by adding an emulsifier of the opposite type one can destroy or diminish the protective action of the emulsifier in the interface, by means of which the emulsion can be made to coagulate. Sometimes, however, the separation of crude oil emulsions is effected by emulsifiers which in themselves may often stabilize emulsions; that is, emulsions of the same type.

The numerous chemical compounds used for the breaking of crude oil emulsions may or may not be of the water-softener type. Some fatty acid compounds, similar to sulfonated oil (or Turkey Red Oil), act on the colloidal matter to destroy the emulsion.

Generally the water content has to be reduced to the order of 1 to 2 per cent and the quantity of chemicals may be used in varying proportions, usually very small percentages and sometimes so little as 1 part in 10,000 to 50,000, on the basis of recovered oil.

References: D. B. Dow, Oil Field Emulsions, U. S. Bureau of Mines, Bull. 250. J. L. Van der Minne, Treatment of Crude Oil Emulsions, Proc. Vol. 1, World Petroleum Congress, London, 1933, page 516.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

Summary of Operations, All Fields, April

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Penna. grade fields	256	609	20	50
Lima	7	121	0	2
Central Ohio	30	39	8	17
Indiana	22	295	9	5
Kentucky	21	575	15	3
Michigan	25	6,130	6	11
Kansas	161	94,980	38	2
Oklahoma	220	110,130	60	9
North Central Texas	275	17,975	114	6
West Texas	139	75,983	20	1
Texas Panhandle	65	34,557	0	15
East Texas	297	16,316	13	0
East Central Texas	25	2,119	10	0
East Texas border counties	2	1,500	0	0
Gulf Coast Texas	98	34,119	17	4
Southwest Texas	254	59,330	46	12
North Louisiana	61	36,300	10	18
Gulf Coast Louisiana	30	16,060	8	0
Arkansas	4	170	1	1
Montana	21	1,274	7	1
Wyoming	5	3,134	1	0
Colorado	2	....	2	0
New Mexico	48	73,679	1	1
Total April	2,068	585,395	406	158
Total March	1,691	485,212	359	108
Difference	377	100,183	47	50

Rigs and Wells Drilling

	Rigs	Drlg.	Total
Pennsylvania grade fields	64	287	351
Lima	3	30	33
Central Ohio	35	78	113
Indiana	3	17	20
Kentucky	6	9	15
Michigan	85	95	180
Kansas	72	292	364
Oklahoma	112	568	680
North Central Texas	57	215	272
West Texas	95	244	339
Texas Panhandle	39	144	183
East Texas	64	170	234
East Central Texas	20	52	72
East Texas Border Counties	3	12	15
Gulf Coast Texas	12	107	119
Southwest Texas	52	185	237
North Louisiana	31	97	128
Gulf Coast Louisiana	16	71	87
Arkansas	7	28	35
Mississippi	1	17	18
Alabama	0	1	1
Florida	1	4	5
Montana	11	68	79
Wyoming	8	53	61
Colorado	7	25	32
New Mexico	21	109	130
Utah	1	8	9
Total April	826	2,986	3,812
Total March	795	2,842	3,637
Difference	31	144	175

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Barton	17	19,200	2	0	3	29	32
Butler	5	492	1	0	1	15	16
Barber	0	0	0	0	2	1	3
Chase	0	0	0	0	0	1	1
Coffey	2	70	0	0	0	3	3
Cowley	9	513	5	0	6	11	17
Edwards	0	0	0	0	0	1	1
Ellis	4	3,020	1	0	6	14	20
Ellsworth	5	4,550	0	0	2	7	9
Finney	0	0	0	0	1	1	2
Graham	0	0	0	0	0	1	1
Grant	0	0	0	0	0	2	2
Greenwood	8	230	4	0	1	15	16
Harper	0	0	0	0	0	1	1
Harvey	3	569	1	1	1	4	5
Haskell	0	0	0	0	1	1	2
Kingman	0	0	0	0	0	2	2
Morris	0	0	0	0	0	1	1
Marion	2	135	1	0	1	0	1
McPherson	4	1,293	1	0	4	7	11
Ness	0	0	0	0	0	1	1
Norton	1	0	1	0	0	0	0
Osage	0	0	0	0	0	1	1
Reno	20	14,859	1	0	5	26	31
Rice	31	30,175	5	0	13	51	64
Rooks	1	0	1	0	1	3	4
Rush	1	0	0	1	1	6	7
Russell	23	12,659	3	0	12	47	59
Scott	0	0	0	0	0	1	1
Sedgwick	2	0	2	0	0	5	5
Stafford	4	1,542	2	0	2	2	4
Stevens	1	0	1	0	0	2	2
Sumner	9	5,143	2	0	5	18	23
Trego	1	10	0	0	2	5	7
Woodson	8	520	4	0	2	7	9
Ttl. Apr.	161	94,980	38	2	72	292	364
Ttl. Mar.	115	59,144	22	1	58	290	348
Difference	46	35,836	16	1	14	2	16

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Alfalfa	0	0	0	0	0	1	1
Atoka	1	0	1	0	0	2	2
Beckham	0	0	0	0	0	3	3
Blaine	0	0	0	0	0	1	1
Bryan	1	0	1	0	0	1	1
Caddo	0	0	0	0	2	5	7
Carter	13	497	4	1	3	23	26
Choctaw	0	0	0	0	0	2	2
Cleveland	0	0	0	0	2	5	7
Coal	0	0	0	0	0	1	1
Comanche	2	0	2	1	1	7	8
Cotton	0	0	0	0	0	3	3
Creek	12	341	2	3	5	29	34
Garfield	1	0	1	0	0	3	3
Garvin	1	0	1	0	1	2	3
Grady	0	0	0	0	0	4	4
Grant	1	152	0	0	0	0	0
Harmon	0	0	0	0	0	1	1
Hughes	19	4,973	3	0	8	17	25
Jackson	2	0	2	0	3	11	14
Jefferson	3	75	1	0	0	3	3
Johnston	0	0	0	0	0	2	2
Kay	3	20	2	0	1	3	4
Kiowa	3	8	2	0	0	3	3
LeFlore	0	0	0	0	0	1	1
Lincoln	3	156	1	0	2	5	7
Logan	4	1,570	1	0	2	11	13
Love	0	0	0	0	0	3	3
Marshall	8	50	5	0	1	7	8
McClain	0	0	0	0	0	1	1
McIntosh	0	0	0	0	1	2	3
Murray	0	0	0	0	0	1	1
Muskogee	5	103	3	0	1	4	5
Noble	0	0	0	0	2	7	9
Okfuskee	9	1,682	1	0	4	20	24
Oklahoma	14	47,360	0	1	32	118	150
Okmulgee	11	76	5	2	5	25	30
Osage	28	11,969	7	0	6	46	52
Pawnee	0	0	0	0	0	10	10
Payne	1	410	0	0	1	5	6
Pittsburg	1	0	0	1	0	0	0
Pontotoc	32	31,898	2	0	12	77	89
Pottawatomie	4	350	2	0	5	12	17
Pushmataha	0	0	0	0	0	1	1
Seminole	26	7,892	5	0	8	48	56
Stephens	8	33	4	0	0	10	10
Tillman	0	0	0	0	1	3	4
Tulsa	2	15	1	0	2	12	15
Wagoner	1	0	1	0	1	5	6
Washita	0	0	0	0	0	1	1
Ttl. Apr.	220	110,130	60	9	112	568	680
Ttl. Mar.	169	79,160	47	9	97	463	560
Difference	51	30,970	13	0	15	105	120

GULF COAST

Texas

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl
Amelia	2	0	2	0	0	3	3
Anahuac	10	6,216	0	0	1	6	7
Barbers Hill	1	120	0	0	1	1	2
Batson	1	380	0	0	0	0	0
Big Hill	0	0	0	0	0	1	1
Big Creek	0	0	0	0	0	1	1
Blue Ridge	1	0	1	0	1	3	4
Boling	1	150	0	0	0	0	0
Bryan Mound	0	0	0	0	0	1	1
Clay Creek	1	51	0	0	0	1	1
Cleveland	0	0	0	0	0	1	1
Coletto Creek	2	192	1	0	0	1	1
Conroe	2	613	0	0	0	2	2
Cotton Lake	1	226	0	0	0	0	0
Damon Mound	2	250	0	0	0	0	0
Dickinson	2	874	0	0	0	7	7
Esperson	1	500	0	0	1	3	4
Fannett	0	0	0	0	0	2	2
Greta	0	0	0	0	0	2	2
Hankamer	0	0	0	0	1	2	3
Hardin	0	0	0	0	0	1	1
Hastings	8	4,691	0	0	2	6	8
High Island	1	473	0	0	0	3	3
Hull	1	504	0	0	0	0	0
Humble	1	0	0	1	1	0	1
Liberty	2	20	0	0	0	0	0
Livingston	3	1,352	0	0	0	0	0
Louise	2	323	0	0	0	0	0
Manvel	6	2,752	0	1	0	2	3
Mauritz	0	0	0	0	0	1	1
Mykawa	0	0	0	0	0	1	1
N. Dayton	1	0	1	0	0	0	0
Orange	1	0	1	0	0	1	1
Orchard	1	0	1	0	0	2	2
Pickett Ridge	3	1,080	0	0	0	4	4
Pierce Jct.	3	280	1	0	0	2	2
Placedo	5	2,816	0	0	0	6	6
Pt. Neches	0	0	0	0	0	1	1
Raccoon Bend	2	2,904	0	0	0	1	1
Refugio	2	1,550	0	0	0	1	1
S. Houston	7	1,501	1	0	0	2	2
Tomball	7	939	0	2	1	3	4
Tomoconnor	2	2,166	0	0	0	0	0
Turtle Bay	0	0	0	0	1	2	3
Van Vleck	1	786	0	0	0	3	3
Withers	1	360	0	0	0	3	3
Misc.	8	0	8	0	1	24	25
Total Apr.	98	34,119	17	4	12	107	119
Total Mar.	96	25,546	29	5	33	106	139
Difference	2	8,573	12	1	21	1	20

Louisiana

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Bayou Mallet	0	0	0	0	0	1	1
Black Bayou	1	0	1	0	0	2	2
Caillou Isl.	2	2,740	0	0	0	3	3
Cameron Meadows	1	425	0	0	1	3	4
Cheneyville	1	240	0	0	0	2	2
Choctaw	0	0	0	0	0	1	1
Darrow	0	0	0	0	0	2	2
Dog Lake	0	0	0	0	0	1	1
Four Isle	0	0	0	0	0	1	1
Garden Isl.	1	1,050	0	0	0	0	0
Gillis	2	600	1	0	1	6	7
Hackberry	0	0	0	0	3	5	8
Iowa	2	1,632	0	0	0	2	2
Jeanerette	2	1,656	0	0	1	1	2
Jennings	0	0	0	0	0	2	2
Lafitte	2	3,412	0	0	1	1	2
Lake Barre	0	0	0	0	0	2	2
Leesville	1	546	0	0	1	3	4
New Iberia	1	625	0	0	0	3	3
Pt. Barre	1	0	1	0	1	3	4
Roanoke	1	720	0	0	2	2	4
St. Martinsville	0	0	0	0	0	2	2
Sorrento	0	0	0	0	0	1	1
Starks	1	0	1	0	0	0	0
Sulphur	3	1,187	0	0	0	1	1
Tepetate	4	1,227	0	0	0	6	6
Vinton	0	0	0	0	1	1	2
White Castle	0	0	0	0	0	1	1
Misc.	4	0	4	0	4	13	17
Total Apr.	30	16,060	3	0	16	71	87
Total Mar.	43	20,719	13	0	14	61	75
Difference	13	4,659	5	0	2	10	12

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Andrews	2	888	0	0	3	1	4
Brewster	0	0	0	0	0	2	2
Concho	0	0	0	0	0	3	3
Crane	3	12,173	0	0	8	15	23
Cochran	0	0	0	0	1	0	1
Crockett	3	307	2	0	0	2	2
Dawson	0	0	0	0	1	0	1
Ector	11	9,160	0	0	8	20	28
Edwards	0	0	0	0	0	1	1
El Paso	0	0	0	0	0	2	2
Fisher	1	528	0	0	3	6	9
Gaines	0	0	0	0	0	2	2
Garza	0	0	0	0	0	0	0
Glasscock	3	254	0	0	3	2	5
Howard	11	8,246	1	0	6	15	21
Hudspeth	0	0	0	0	0	1	1
Irion	1	0	0	1	0	0	0
Jeff Davis	0	0	0	0	0	1	1
Jones	19	3,794	8	0	5	18	23
Loving	1	0	1	0	1	2	3
Martin	0	0	0	0	0	1	1
Menard	0	0	0	0	0	1	1
Nolan	0	0	0	0	0	1	1
Pecos	15	1,521	2	0	9	21	30
Presidio	0	0	0	0	0	1	1
Reagan	0	0	0	0	1	0	1
Reeves	0	0	0	0	0	1	1
Runnels	0	0	0	0	0	2	2
Schleicher	0	0	0	0	0	2	2
Scurry	1	30	0	0	1	1	2
Taylor	1	0	1	0	0	1	1
Terrell	0	0	0	0	0	1	1
Tom Green	0	0	0	0	0	1	1
Upton	12	4,431	1	0	10	19	29
Ward	22	15,199	1	0	18	51	69
Winkler	32	19,158	3	0	16	47	63
Yoakum	1	234	0	0	1	0	1
Total Apr.	139	75,983	20	1	95	244	339
Total Mar.	108	50,626	24	2	66	229	295
Difference	31	25,357	4	1	29	15	44

EAST CENTRAL AND EAST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Anderson	6	752	0	0	2	6	8
Angelina	4	0	4	0	1	0	1
Bowie	0	0	0	0	0	3	3
Cherokee	7	318	0	0	2	5	7
Ellis	0	0	0	0	0	1	1
Falls	0	0	0	0	0	1	1
Fannin	0	0	0	0	0	6	6
Franklin	1	352	0	0	1	1	2
Freestone	1	111	0	0	0	3	3
Gregg	133	4,933	3	0	23	50	73
Henderson	0	0	0	0	5	3	8
Hill	0	0	0	0	0	1	1
Kaufman	0	0	0	0	1	1	2
Lamar	0	0	0	0	3	3	6
Limestone	0	0	0	0	0	2	2
McLennan	0	0	0	0	1	0	1
Morris	0	0	0	0	0	2	2
Nacogdoches	0	0	0	0	0	1	1
Navarro	4	15	3	0	1	4	5
Raines	0	0	0	0	0	1	1
Red River	1	0	1	0	2	3	5
Rockwall	0	0	0	0	0	2	2
Rusk	81	7,690	1	0	20	66	86
Smith	22	1,071	2	0	3	12	15
Titus	3	552	2	0	1	5	6
Upshur	54	2,304	7	0	16	37	53
Van Zandt	4	337	0	0	2	3	5
Total Apr.	322	18,435	23	0	84	222	306
Total Mar.	241	8,394	18	1	97	244	341
Difference	81	10,041	5	1	13	22	35

SOUTHWEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Alta Verde	0	0	0	0	1	0	1
Bateman	1	50	0	0	0	0	0
Blas Uribe	1	0	1	0	0	0	0
Branyon	1	600	0	0	0	0	0
Caesar	0	0	0	0	0	1	1
Callihan	3	83	1	0	0	2	2
Carolina-Texas	1	10	0	0	0	0	0
Clark	1	100	0	0	0	1	1
Cole	2	0	1	1	0	1	1
Dale	1	0	1	0	0	0	0
Dirks	3	1,930	0	0	0	2	2
Escobas	4	60	1	0	0	3	3
Gillette	2	240	1	0	0	2	2
Gov. Wells	1	0	0	1	0	1	1
Hagist	0	0	0	0	0	1	1
Haynes	2	40	1	0	0	1	1
Hoffman	6	1,230	2	1	1	2	3
Jacob	2	40	1	0	0	0	0
King	0	0	0	0	0	1	1
Loma Novia	58	15,795	1	2	6	18	24
Loma Vista	0	0	0	0	1	0	1
Lopez	20	7,745	0	3	1	6	7
Lucas	0	0	0	0	0	1	1
Margo	0	0	0	0	0	2	2
Mercedes	0	0	0	0	0	3	3
O'Hern	12	3,500	2	1	0	4	4
Pearsall	3	530	0	0	1	5	6
Pettus	2	90	0	1	0	2	2
Plymouth	6	1,040	0	0	1	6	7
Piedra Lumbre	2	460	0	0	0	2	2
Plummer	1	0	1	0	0	0	0
Ray	3	0	3	0	1	0	1
Rio Grande City	1	0	1	0	0	1	1
Salt Flats	1	40	0	0	0	0	0
Samfordyce	7	285	0	0	2	8	10
Sandia	0	0	0	0	0	1	1
San Diego	0	0	0	0	0	1	1
Saxet	13	3,590	0	0	4	18	22
Saxet Heights	30	7,400	3	1	6	20	26
Seven Sisters	41	14,429	3	1	4	15	19
Taft	0	0	0	0	0	2	2
Von Ormy	0	0	0	0	0	2	2
Zobrowlski	1	33	0	0	0	1	1
Misc.	22	0	22	0	23	49	72
Ttl. Apr.	254	59,330	46	12	52	185	237
Ttl. Mar.	276	100,840	56	6	45	185	230
Difference	12	41,510	10	6	7	0	7

NORTH AND CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Archer	57	5,264	22	0	6	22	28
Baylor	7	600	3	0	0	3	3
Brown	0	0	0	0	2	3	5
Callahan	7	149	4	1	3	10	13
Clay	5	195	3	0	0	4	4
Coleman	0	0	0	0	1	2	3
Comanche	1	0	1	0	1	3	4
Collin	0	0	0	0	1	1	2
Cooke	32	1,370	8	2	3	33	36
Denton	0	0	0	0	1	4	5
Eastland	2	12	1	0	1	6	7
Erath	0	0	0	0	0	1	1
Foard	0	0	0	0	0	1	1
Grayson	0	0	0	0	1	2	3
Hamilton	0	0	0	0	0	3	3
Jack	17	866	7	3	7	18	25
Johnson	0	0	0	0	0	1	1
McCulloch	0	0	0	0	0	3	3
Mills	0	0	0	0	0	1	1
Montague	10	317	2	0	1	9	10
Parker	0	0	0	0	0	1	1
Shackelford	26	1,233	12	0	4	23	27
Stephens	2	0	2	0	0	3	3
Tarrant	0	0	0	0	0	1	1
Throckmorton	4	0	4	0	0	3	3
Wichita	30	905	13	0	7	14	21
Wilbarger	15	280	7	0	1	11	12
Wise	0	0	0	0	0	1	1
Young	60	6,784	24	0	17	28	45
Total Apr.	275	17,975	114	6	57	215	272
Total Mar.	226	8,361	100	8	73	242	315
Difference	49	9,614	14	2	16	27	43

TEXAS PANHANDLE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Carson	5	1,812	0	2	3	12	15
Gray	19	10,142	0	2	14	47	61
Hall	0	0	0	0	0	1	1
Hartley	0	0	0	0	0	1	1
Hutchinson	17	8,778	0	0	13	38	51
Moore	9	189	0	8	4	15	19
Roberts	0	0	0	0	0	2	2
Wheeler	15	13,636	0	3	5	28	33
Total Apr.	65	34,557	0	15	39	144	183
Total Mar.	51	24,449	1	15	31	136	167
Difference	14	10,108	1	0	8	8	16

LOUISIANA-ARKANSAS

North Louisiana

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Bienville	2	0	1	1	2	0	2
Bossier	0	0	0	0	0	5	5
Caddo	32	36,000	0	2	12	56	68
Caldwell	1	0	1	0	0	2	2
Claiborne	1	0	1	0	0	3	3
Concordia	0	0	0	0	1	1	2
De Soto	4	0	4	0	1	2	3
Franklin	0	0	0	0	1	0	1
Grant	1	0	1	0	1	4	5
Jackson	0	0	0	0	1	0	1
La Salle	0	0	0	0	0	2	2
Lincoln	1	0	1	0	0	3	3
Morehouse	7	0	0	7	3	4	7
Ouachita	1	0	0	1	0	0	0
Red River	0	0	0	0	1	2	3
Richland	0	0	0	0	0	2	2
Sabine	4	300	1	0	3	4	7
Tensas	0	0	0	0	1	1	2
Union	7	0	0	7	3	3	6

Vernon	0	0	0	0	0	1	1
Webster ...	0	0	0	0	1	3	4
Winn	0	0	0	0	0	0	0
Total Apr.	61	36,300	10	18	31	97	128
Total Mar.	36	29,507	7	3	43	102	145
Difference.	25	6,793	3	15	12	5	17

Arkansas

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Arkansas ..	0	0	0	0	1	0	1
Ashley	0	0	0	0	0	1	1
Calhoun ...	0	0	0	0	0	1	1
Clarke	0	0	0	0	0	1	1
Columbia ..	0	0	0	0	0	0	0
Dallas	0	0	0	0	0	1	1
Hempstead..	0	0	0	0	1	2	3
LaFayette .	0	0	0	0	0	4	4
Miller	1	0	1	0	2	5	7
Monroe	0	0	0	0	0	0	0
Ouachita ..	0	0	0	0	2	3	5
Pulaski ...	0	0	0	0	0	0	0
Union	3	170	0	1	1	10	15
Total Apr..	4	170	1	1	7	28	35
Total Mar.	7	820	5	0	11	26	37
Difference.	3	650	4	1	4	2	2

ROCKY MOUNTAIN AREA

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Bernalillo .	0	0	0	0	0	2	2
McKinley ..	1	18	0	0	1	5	6
Rio Arriba.	0	0	0	0	1	0	1
Santa Fe ..	0	0	0	0	0	2	2
San Juan ..	0	0	0	0	3	5	8
Torrance ..	0	0	0	0	0	2	2
Valencia ...	0	0	0	0	1	3	4
Lea	45	73,541	1	1	15	80	95
Eddy	2	120	0	0	0	9	9
Chaves	0	0	0	0	0	1	1
Total Apr.	48	73,679	1	1	21	109	130
Total Mar.	42	53,728	4	2	9	93	102
Difference.	6	19,951	3	1	12	16	28

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Adams	0	0	0	0	0	2	2
Archuleta ..	1	0	1	0	1	3	4
Huerfano ..	0	0	0	0	0	3	3
Jefferson ..	0	0	0	0	1	1	2
Larimer ...	0	0	0	0	0	2	2
Moffat	0	0	0	0	1	1	2
Park	0	0	0	0	1	1	2
Washington.	1	0	1	0	1	0	1
Weld	0	0	0	0	1	0	1
Yuma	0	0	0	0	1	0	1
Misc.	0	0	0	0	0	12	12
Total Apr.	2	0	2	0	7	25	32
Total Mar.	4	2,002	2	0	3	25	28
Difference	2	2,002	0	0	4	0	4

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Albany	0	0	0	0	1	2	3
Big Horn ..	0	0	0	0	2	12	14
Carbon	1	518	0	0	1	8	9
Converse ..	0	0	0	0	0	3	3
Fremont ...	0	0	0	0	1	2	3
Hot Springs	0	0	0	0	0	3	3
Lincoln	0	0	0	0	0	2	2
Niobrara ..	1	2,600	0	0	2	7	9
Park	0	0	0	0	0	2	2
Sweetwater.	1	0	1	0	0	1	1
Uinta	0	0	0	0	0	3	3
Washakie .	0	0	0	0	0	3	3
Weston	2	16	0	0	0	3	3
Misc.	0	0	0	0	1	2	3
Total Apr.	5	3,134	1	0	8	53	61
Total Mar.	8	8,853	1	0	7	52	59
Difference	3	5,718	1	0	1	1	2

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Big Horn ..	0	0	0	0	0	2	2
Carbon	0	0	0	0	0	2	2
Fergus	2	0	1	1	0	6	6
Glacier	15	1,224	3	0	7	25	32
Petroleum .	1	0	1	0	0	2	2
Pondera ...	0	0	0	0	2	4	6
Toole	3	50	2	0	2	19	21
Misc.	0	0	0	0	0	8	8
Total Apr.	21	1,274	7	1	11	68	79
Total Mar.	7	369	2	0	16	59	75
Difference	14	905	5	1	5	9	4

Utah

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Total Apr...	0	0	0	0	1	8	9
Total Mar..	3	0	3	0	1	8	9
Difference	3	0	3	0	0	0	0

EASTERN FIELDS

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Bradford	*128	180	0	0
Allegany	†7	5	0	0
Venango-Clarion	†17	10	0	1
Butler-Armstrong	7	5	1	0
Southwest Penna.	14	24	5	6
Southeast Ohio	33	288	6	8
West Virginia	50	97	8	35
Total April	256	609	20	50
Total March	190	576	10	37
Difference	66	33	10	13

*Includes 22 pressure wells. †Includes 2 pressure wells.

Summary of Work Underway

Field—	Rigs	Dig.	Ttl.
Bradford	11	68	79
Allegany	0	6	6
Venango-Clarion	1	10	11
Butler-Armstrong	3	3	6
Southwest Pennsylvania ...	9	23	32
Southeast Ohio	10	59	69
West Virginia	30	118	148
Total April	64	287	351
Total March	53	253	306
Difference	11	34	45

MICHIGAN

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Midland ..	5	600	1	0	16	18	34
Isabella ...	9	130	1	6	10	8	18
Oceana ...	0	0	0	0	0	2	2
Gratiot ...	1	0	1	0	2	5	7
Huron	0	0	0	0	1	1	2
St. Clair ..	0	0	0	0	2	0	2
Osceola ...	0	0	0	0	1	0	1
Kent	0	0	0	0	1	2	3
Emmett ..	0	0	0	0	1	1	2
Cass	0	0	0	0	6	1	7
Sanilac ..	0	0	0	0	3	0	3
Newaygo .	0	0	0	0	0	3	3
Saginaw ..	0	0	0	0	3	2	5
Livingston.	1	0	0	1	0	3	3
Shiawassee	0	0	0	0	1	4	5
Ogemaw ..	1	400	0	0	8	10	18
Gladwin .	1	0	1	0	0	4	4
Eaton	0	0	0	0	0	1	1
Hillsdale ..	0	0	0	0	2	0	2
Lenawee ..	0	0	0	0	1	0	1
Lapeer ...	0	0	0	0	3	2	5
Bay	0	0	0	0	1	0	1
Roscommon	1	0	1	0	1	0	1
Mason	0	0	0	0	0	1	1
Chippewa..	0	0	0	0	1	0	1
Clinton ...	0	0	0	0	1	0	1
Arenac ...	0	0	0	0	0	1	1
Mecosta ..	2	0	0	2	9	18	17
Montcalm.	3	5,000	1	1	5	11	16
Muskegon..	1	0	0	1	6	7	13
Ttl. April	25	6,130	6	11	85	95	180
Ttl. Mar..	40	4,065	9	11	86	111	197
Difference	15	2,065	3	0	1	16	17

INDIANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Daviess ...	2	15	0	0	0	1	1
Decatur ..	1	0	0	1	1	0	1
Dubois	1	0	1	0	0	0	0
Gibson	2	140	1	0	0	2	2
Hancock ..	1	0	0	1	0	1	1
Johnson ..	0	0	0	0	0	1	1
Knox	5	20	3	0	1	2	3
Pike	3	60	0	2	0	2	2
Perry	2	0	1	1	1	6	7
Spencer ...	1	10	0	0	0	1	1
Sullivan ..	2	0	2	0	0	0	0
Vanderburg	2	50	1	0	0	1	1
Ttl. April.	22	295	9	5	3	17	20
Ttl. March	7	60	4	1	0	20	20
Difference	15	235	5	4	3	3	0

CENTRAL OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Wayne ...	2	0	0	2	4	3	7
Ashland ..	1	0	1	0	1	4	5
Lorain	5	0	1	2	4	2	6
Richland ..	1	0	0	1	1	2	3
Tuscarawas	1	0	0	1	0	2	2
Holmes ...	5	36	1	2	4	6	10
Summitt ...	0	0	0	0	5	5	10
Coshocton .	3	0	0	3	2	4	6
Huron	0	0	0	0	0	2	2
Logan	0	0	0	0	0	1	1
Stark	8	0	5	3	5	17	22
Cuyahoga .	0	0	0	0	1	0	1
Delaware..	0	0	0	0	0	1	1
Lawrence..	0	0	0	0	2	3	5
Pike	0	0	0	0	0	5	5
Scioto	0	0	0	0	0	1	1
Gallia	0	0	0	0	0	4	4
Fairfield ..	2	0	0	2	1	4	5
Perry	1	0	0	1	4	9	13
Hocking ..	1	3	0	0	1	3	4
Ttl. April.	30	39	8	17	35	78	113
Ttl. March	16	5	8	7	25	74	99
Difference	14	34	0	10	10	4	14

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Wood	0	0	0	0	0	3	3
Henry	0	0	0	0	0	2	2
Hancock .	0	0	0	0	0	1	1
Allen	1	20	0	0	0	2	2
Auglaize ..	0	0	0	0	0	3	3
Mercer ...	0	0	0	0	0	1	1
Hardin ...	0	0	0	0	2	2	4
Darke	0	0	0	0	0	3	3
Ottawa ...	1	25	0	0	0	0	0
Logan	0	0	0	0	0	1	1
Seneca	1	0	0	1	0	5	5
Sandusky .	3	6	0	1	0	2	2
Wyandot ..	0	0	0	0	1	5	6
Putnam ..	1	70	0	0	0	0	0
Ttl. April.	7	121	0	2	3	30	35
Ttl. March	1	0	1	0	7	30	37
Difference	6	121	1	2	4	0	4

KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Ohio	4	0	3	1	4	2	6
McLean ...	17	575	12	2	2	7	9
Ttl. April.	21	575	15	3	6	9	15
Ttl. March	22	1,788	5	0	7	19	26
Difference	1	1,213	10	3	1	10	9

Lance Creek Deal

DENVER, Colo., June 22. — Back of the deal closed recently whereby Mackinnie Oil & Drilling Co. acquired the Thompson lease in Lance Creek, Niobrara County, Wyoming, and began drilling operations jointly with J. M. Huber Corp. is a program of Powerine Co., of Denver, to develop its own crude production with a view to building a refinery at Denver. Powerine Co. is the fifth largest distributor in Colorado, with retail outlets in Denver and bulk stations throughout Colorado and adjoining states. Powerine Co. paid the gasoline tax in 1935 on 5,586,000 gallons received in Colorado, exceeded only by Continental, Texas, Phillips and Standard of Indiana. The Mackinnie company will become the producing unit for Powerine Co.

The program was disclosed when Fred C. Cramer, president of Powerine Co., was elected president of the Mackinnie company to succeed O. H. Sboup, former governor of Colorado and president of Midwest Oil Co., who is no longer a stockholder or officer in the company. The Mackinnie company has been acquiring holdings in Wyoming and Colorado with a view to developing a supply of crude for the proposed refinery.

Powerine Co. has been one of the leading distributors in the Denver territory for a number of years and several of the major companies have attempted to buy the outlets. The Parco, Wyo., refinery built by the old Producers & Refiners Corp., was constructed following the making of a contract with the company to distribute its products in this territory.

This modern plant, with 16,000 square feet of floor space, was built to meet the ever growing demand for O-C-T Streamline Christmas-trees and other Well Control Equipment.

The new home of O-C-T products stands as a testimonial to the success of equipment we have designed to better fill your needs in the oil country. To us it symbolizes the happy cycle of "Better equipment enables you to operate more safely and economically, and your better patronage in turn enables us to provide this better means of serving you."

We invite you to visit this new plant and to see for yourself the care taken in producing O-C-T products.

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HOUSTON, TEXAS, U.S.A.
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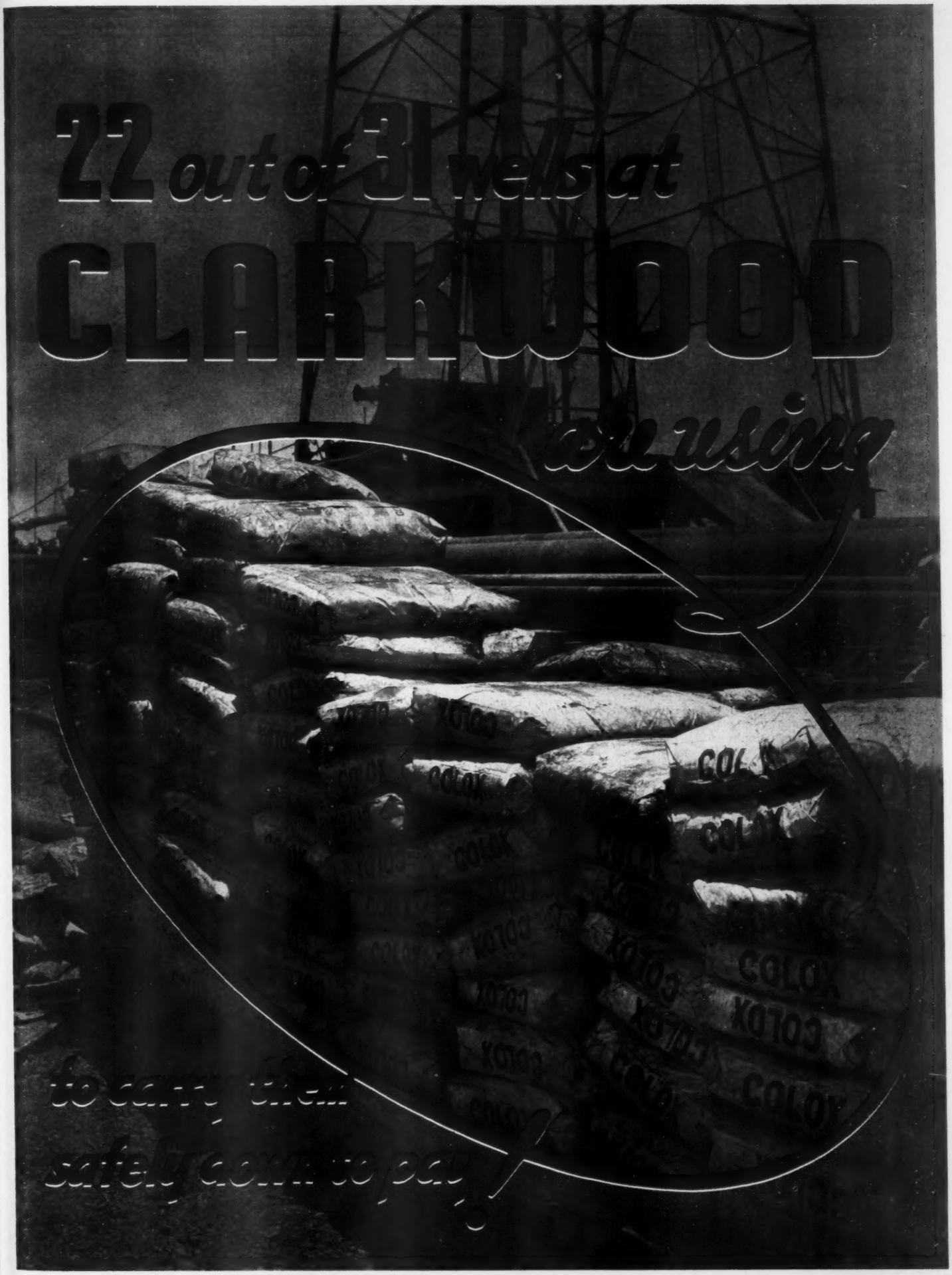
22 out of 31 wells at
CLARKWOOD
on using
to carry them
safely down to pay!

PROBLEMS FROM READERS

Edited by T. F. Smiley

Composition of Paraffin in the Well and What Determines Its Volume

Please tell me what causes paraffin to accumulate in a well. What is it composed of? Does it accumulate at certain depths only, or is it found at any depth? Does the depth change in any one well? What conditions determine the quantity of the paraffin that may accumulate? I hope I am not asking too many questions. —N. S. T.

The deposits of waxy residues found in many oil wells and known throughout the oil country as paraffin are a source of serious trouble and expense. Laboratory examination of paraffin shows it consists principally of amorphous wax, precipitated salts, fine silt, and gummy residues. Any one or a combination of any of these constituents may predominate. The relative amount present depends largely upon the character of the oil produced, the properties of the water, if present, produced with the oil, and the character of the productive sands in the well. From observations made on tubed flowing wells, the paraffin deposit is found to extend to widely varying depths in the tubing in different wells and may be anywhere from a few hundred feet or less to 1,000 feet or more.

From the lowest point upward the deposit gradually increases in thickness, reaching a maximum at the top of the tubing string. The lowest point to which the paraffin extends in the tubing closely approximates the fluid level in the well. This would indicate that as the well grows older and the fluid level falls, an increase in the depth of the deposit may be looked for. The amount of paraffin deposited is dependent upon the properties of the oil, the gas pressure, and the ratio of gas to oil produced. A study of what takes place in the well will explain more clearly the conditions under which the paraffin is deposited in the tubing.

When great volumes of highly compressed gas are released, or, in other words, expanded, quantities of heat are required by the gas to accomplish the work of expansion. In a well producing oil and gas under relatively high pressure, the heat absorbed by the gas in expanding is taken from the oil, thereby chilling the oil and causing paraffin to separate out and, subsequently, to be deposited in the tubing. As the expansion of the gas is gradual from the bottom of the well to the surface, the chilling effect on the oil reaches a maximum at the tubing-head, resulting in the greatest precipitation of paraffin at this point.

That the deposition of paraffin does not take place below the fluid level is probable, due to the presence of sufficient liquid which minimizes the chilling effect of the expanding gas by dissipating it. The reduction of the gas factor, therefore, tends also to decrease paraffin trouble.

Good Heater for Breaking Emulsions Can Be Made Out of a Junk Boiler

Perhaps you can tell me something about practical methods of heating crude-oil emulsions as a means of breaking them down. I would like to know what sort of device can be used in the field and whether it can be made out of material usually found on the lease or must be bought from some equipment concern.—G. E. L.

A heater for the purpose you name can be made from a junk steam boiler, and it is described as one of the most efficient and durable heaters that can be obtained. This type of boiler heater usually is placed so that all the fluid from the well is heated as it passes through the boiler before entering the treating tanks. It is advisable in most cases to have a thermostat control the heat within the boiler to the most effective treating temperature. When replacement of flues becomes necessary in a treating boiler, satisfactory flues may be made of 4-inch line pipe, electrically welded into the flue sheet.

Ground heaters offer a means of breaking emulsions. One type of ground heater is placed so that all the fluid from the well passes through the heater before entering the treating system. This type usually wastes gas and its capacity is likely to be so small as to make it difficult to control the temperature of the fluid passing through. Another type of ground heater is installed so that by a thermosiphon action the water in the wash-tank may be circulated through the ground heater.

Still another type of ground heater is so installed fresh water may be circulated by thermosiphon action in a closed system through the heater to a drum coil inside the treating tank and thence back to the heater. This system is used in areas where brine produced by the well is corrosive to iron when heated. Any type of thermosiphon heater should be so made that the line carrying the warm water from the heater has a continuous slope upward to the highest point in the circulating system. From this highest point there should be a continuous slope downward for the water returning to the heater. If properly constructed, check valves are not necessary in either the intake or discharge lines of the thermosiphon heater.

In some areas live steam may be bubbled directly into the crude oil for heating purposes. In other areas such a procedure would create an emulsion difficult to break. Steam also is used to heat oil through coils or drums installed in treating or stock tanks.

WHY THEY CALLED IT *Filling Station*

"Filling station" is giving way to the more accurate designation "service station." Before the days when a courteous attendant hastened to wipe the windshield, test the tires and check the oil and water, there was just one purpose in a visit, namely, to get the tank filled. So they called it a filling station. C. M. Rolston, of Vancouver, British Columbia, is credited with having opened the first filling station in Canada and perhaps in the world. His establishment was a hot-water boiler mounted against a wall and fitted with a hose. Gasoline desired by the driver of a horseless carriage would be run out through the hose into a container of known capacity and then poured into the old-fashioned tank beneath the front seat. Thus serviced, the strange-looking prototype of the modern motor car would go chug-chugging on its way.

Estimating Costs Involved in Laying Short Pipe Line for Natural Gas

We contemplate laying a natural gas pipe line about 7 or 8 miles long. Can you give me the aproximate costs involved in such a job?—S. L. A.

For short-length pipe-line jobs the following empirical figures can be used to arrive at approximate costs of the work. These figures are based upon an average wage for pipe-line workers and common labor and are taken from actual costs of work of this kind in Mid-Continent oil fields. The prices given are based upon lineal feet only and do not take into consideration width of right-of-way. The cost of material is not included.

	Cents per ft.
Right of way (easement rights)	3
Surveying	½
Clearing right of way	¼ to 2½
*Ditching, 24 inches deep:	
By machine	7
By hand	12
Hauling materials to right of way (per ton per mile)	20
Laying pipe, per inch of diameter	1
Inspecting	1

*Backfilling is included in ditching cost.

Washing In a Well Is One Method of Minimizing Danger of a Blowout

What is meant by "washing in" a well? It seems to be a method of completing a well, but in this part of the country there is no such method that I know of. I see the term used a good deal, however.—N. G .Y.

Completion of wells by the "washing in" method prevents them flowing mud and oil over surrounding property, and the danger of blowing out is minimized. The method has been followed for years in California and Gulf Coast fields. The job is done on virtually the same system and with the same kind of equipment in all areas. In his work on "Deep Well Drilling" Walter H. Jeffery describes the washing-in process as follows:

"Some operators use an extra string of 5-inch casing with five to eight of the bottom joints perforated with three-eighths inch holes, or a fine-mesh screen. About 72 three-eighths inch holes per foot of casing are drilled when perforated casing is used. Fresh water is pumped down through the 5-inch casing and the wash-pipe, and the mud is flowed out in the annular space between the 5-inch and 7-inch casing. After the mud has been flowed out, a spear is let down on a sand line and the wash-pipe and packing-ring are pulled. Clean water then is pumped down the 5-inch casing and out through the perforations. The well is then bailed down until gas begins to bubble through the water, when the well is turned into the separators.

"Another method is to wash the well with the drillpipe. After finishing the well, the mud fluid is gradually thinned until clear water only is being circulated. During this operation the drillpipe with the last rotary bit used in drilling is worked up and down past the producing formation. When the circulation returns show clear water the drillpipe is pulled and the well is bailed down until it commences to flow through the 7-inch casing. This method has the advantage of requiring no additional string of 5-inch casing.

"It has been found that by either of these methods of washing in the wells the gas-oil ratios have been reduced. One well washed in this manner produced at the rate of 18,000 bbls. per day with a gas-oil ratio of 900 cubic feet per barrel.

"It is essential in washing wells by either of these methods to maintain a relatively high early back pressure on the well for the purpose of starting its flow as slowly and uniformly as possible."

You asked for it.

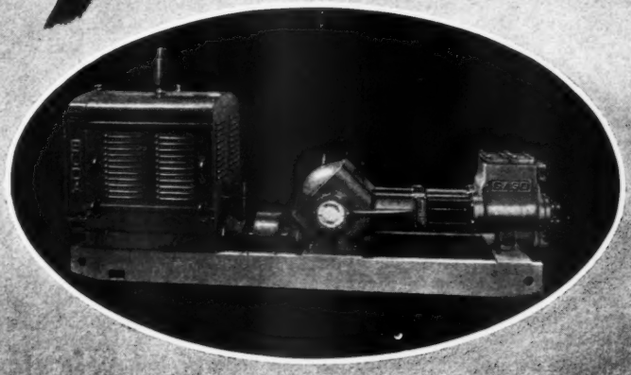

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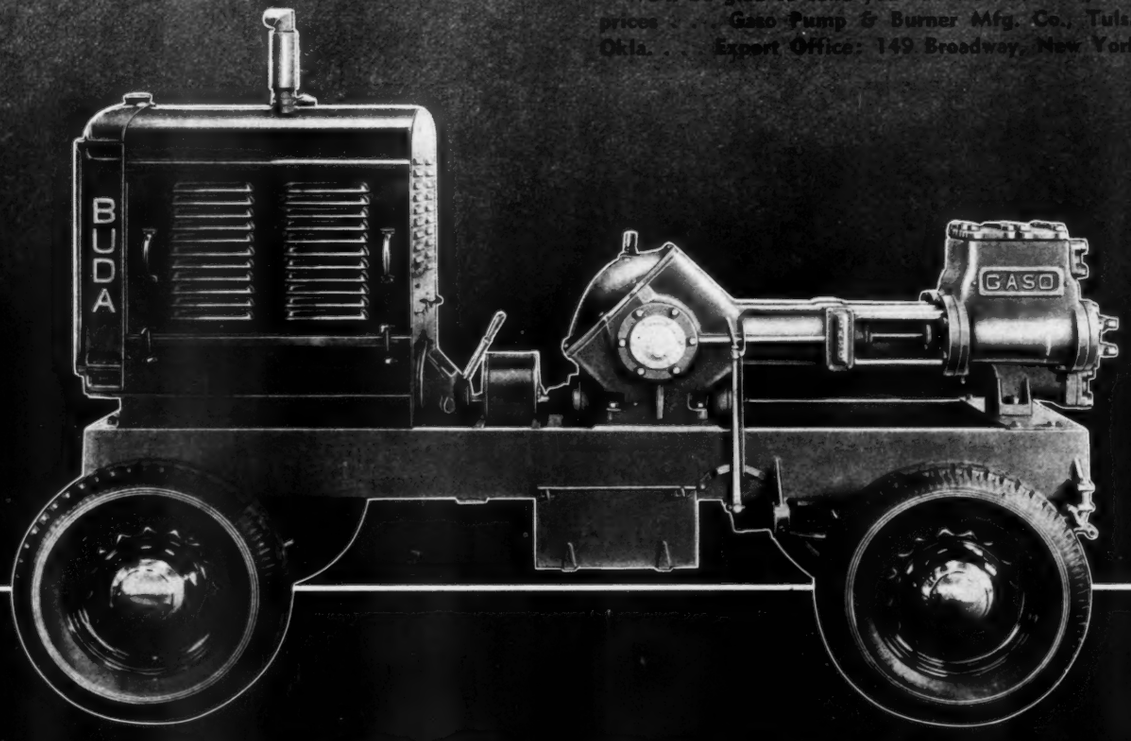
Fig. 2244 Gaso Duplex Enclosed Type Worm-Driven Power Pump—Capacities: 50 to 128 barrels at pressures of 650 to 350 lbs. . . . Worm drive of ground steel . . . Bronze ring gear and Timken Bearings.



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The purchase for cash of serviceable used material of all kinds—single items or complete lease equipment—no deal too large or too complicated for us to handle—

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• • •

The renting, on sound deals with legitimate operators, of Pipe, Machinery, Tools, etc., to complete special projects and to relieve unwarranted investments—

• • •

The assistance in financing and in working out special deals of many kinds with legitimate operators on sound propositions—

• • •

The distributing of a complete line of new and modern drilling and production equipment—everything required to drill a Cable Tool or Rotary Well and all the equipment required to equip a producing lease.

We invite responsible and established operators to discuss their needs and their problems with us. We are in position to entertain worthy propositions of either a common-place or unusual nature.

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FIELD OPERATIONS

Summarizing the Week's Developments

The past week was featured by especially large initial producers of oil and gas, the oil wells in New Mexico and Oklahoma and the gas wells in Michigan and Pennsylvania.

In the Crescent pool in Logan County, Oklahoma, a new well flowed 3,262 barrels of oil in two hours or at the rate of 39,144 barrels per day. A completion in the Capitol extension of the Oklahoma City pool was rated at 17,183 barrels per day.

NEW MEXICO

The Monument pool in Lea County, New Mexico, supplied a sensational well starting at 18,000 barrels a day, while a number of other large producers were completed in the county.

CALIFORNIA

A wildcat in Kern County, California, has either opened a pool or extended the Lost Hills field. Shallow production in the Terminal Island district of Los Angeles harbor was proven and the Montebello pool was extended.

TEXAS

Two new wells in Talco, Titus County, Texas, one the largest producer thus far completed, were more than matched by nine new locations on most of which rigs are already up. That work in the East Texas field is on the wane is shown by the total number of completed wells thus far in 1936 compared with the same period last year. Altogether this year 1,305 new wells were reported as against 2,351 in the same period in 1935. However, Texas as a whole completed more wells than in the same period a year ago. An interesting prospective pool opener in Gaines County, together with extension wells, were reported out of West Texas, while Southwest Texas was featured by extensions and the discovery of oil in the North Kohler gas field. Last week's interesting discovery well in Harrison County, eastern Texas, proved a flash in the pan.

MICHIGAN

Oil production in Michigan is slowly but steadily declining, but as a gas-producing state Michigan threatens to rival Louisiana, Texas Panhandle and Kansas. A 77,000,000-foot gas well in Montcalm County completed last week is the largest yet brought in in the state.

KANSAS

The week's news out of Kansas was featured by the extension of the wildcat campaign into far southwestern counties of Meade and Clark. Ellis County, in central western Kansas, is steadily becoming more important in the oil picture.

NORTH LOUISIANA

The Rodessa field in Caddo County, Louisiana, had only routine completions in the past week, while the Cass County, Texas, side of the field had none. The Permian zone in northeastern Smackover, Arkansas, still held the close attention of operators, but expected completions did not materialize up to the close of this report.

Outstanding Fields—Highlights

(Week ending June 20)

TEXAS

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
Anahuac	2	7	3	1,150	87	8,245
Hastings	2	6	0	0	78	7,320
Loma Novia	1	16	8	2,920	493	14,670
Seven Sisters	2	12	4	1,740	214	5,970
Saxet Heights	4	18	8	2,970	114	7,860
Saxet	5	30	3	480	136	10,520
East Texas	72	165	48	‡1,727	20,772	444,150

‡Duration of initial production averaged 2 hours, 55 minutes per well.

OKLAHOMA

Oklahoma City	9	94	10	*23,395	1,027	125,725
Fitts	10	61	6	*3,220	375	55,700
Burbank-S. Burbank	4	9	1	266	2,143	22,425

*Short-time initial flows.

KANSAS

Ellis County	6	33	2	1,497	25	1,456
Reno County	6	22	3	2,143	281	13,297
Russell County	12	52	9	1,754	424	18,731
Rice County	7	44	4	7,204	475	31,704

NEW MEXICO

Lea County	20	92	20	50,452	834	66,630

LOUISIANA-TEXAS

Rodessa, La.	7	43	7	2,448	206	54,700
Rodessa, Tex.	0	12	0	0	18	5,150
Gillis, La.	1	7	0	0	40	13,096
Tepetate, La.	1	2	2	†1,080	17	4,125

†Initial 24-hour production through quarter-inch choke.

MICHIGAN

Porter-Yost	9	15	2	550	383	17,946
Crystal-Montcalm	5	10	4	700	132	5,781

Stocks of Crude Petroleum

(United States Bureau of Mines)

GRADE OF CRUDE OIL	June 6 1936	May 30 1936	June 8 1935
Pennsylvania Grade	4,320,000	4,280,000	4,813,000
Other Appalachian	928,000	871,000	980,000
Lima-N. E. Indiana-Michigan	1,307,000	1,329,000	1,360,000
Illinois-S. W. Indiana	10,262,000	10,325,000	11,574,000
N. Louisiana-Arkansas	10,434,000	10,545,000	10,349,000
West Texas-S. E. New Mexico	28,891,000	28,675,000	31,275,000
East Texas	21,739,000	21,384,000	30,275,000
Other Mid-Continent	126,493,000	127,005,000	147,607,000
Gulf Coast	28,806,000	28,456,000	23,204,000
Rocky Mountain	26,571,000	26,524,000	27,353,000
California	34,943,000	34,789,000	30,182,000
Foreign oil in U. S.	2,709,000	2,937,000	3,590,000
Total reported	297,403,000	297,120,000	322,562,000
Estimate of unreported stocks	16,950,000	16,900,000	14,500,000
Total stocks in U. S.	314,353,000	314,020,000	337,062,000

Completions in All Fields

(Week ending June 20)

	Oil	Gas	Dry	Ttl.	1936 Total comp. to date	1935 Total comp. to date
Penna. Grade Fields	36	14	9	59	1,344	1,291
Lima Field	0	4	1	5	26	46
Central Ohio	0	7	3	10	128	214
Indiana	4	2	1	7	75	94
Illinois	0	0	0	0	11	9
Michigan	9	5	3	17	242	170
Kentucky	6	0	6	12	99	106
Kansas	32	2	9	43	716	550
Oklahoma	42	2	14	58	1,109	862
North Cent. Texas	33	0	18	51	1,287	1,208
West Texas	30	0	2	32	634	356
Texas Panhandle	8	4	1	13	323	306
East Cent. Texas	4	3	1	8	129	113
East Texas	48	0	2	50	1,305	2,351
East Texas border	0	0	0	0	22	5
Gulf Coast Texas	11	0	6	17	512	473
Southwest Texas	43	0	9	52	1,314	613
Total Texas	177	7	39	223	5,526	5,425
North Louisiana	9	3	4	16	303	133
Gulf Coast Louisiana	4	0	2	6	182	182
Total Louisiana	13	3	6	22	485	315
Arkansas	0	0	1	1	42	73
Montana	6	0	0	6	87	55
Wyoming	3	0	0	3	40	24
Colorado	0	0	0	0	14	6
New Mexico	20	0	2	22	257	131
Utah	0	0	1	1	4	4
California	15	0	7	22	454	496
Total United States	363	46	102	511	10,667	9,871
Total previous wk.	367	45	112	524	.....	.....
Difference	4	1	10	13	.....	.....

Michigan Field Report

By
PAUL A. ELLIOTT

MONTCALM COUNTY GASSER STARTS AT 77 MILLION FEET

MUSKEGON, Mich., June 22.—Gassers again led the parade of 17 completions last week in nine Michigan fields and two wildcat areas adding 152,000,000 feet of open flow gas from five central-state wells, whereas nine oil producers added only 1,740 bbls. initial, and three tests were dry.

Climaxing a steady succession of new record gas wells, Wolverine Natural Gas Co., of Grand Rapids, brought in the "king" of all gassers during recent years east of the Mississippi, a well gauging 77,248,000 feet daily open flow capacity. The well is No. 3 L. E. and Elsie Richardson, SW SE section 3, Belvidere Township, Montcalm County.

Michigan Stray sands were topped at 1,242 feet and the well drilled through 37 feet of pay to 1,283 feet before the tools were removed. Though located within a proved section of the Tri-Townships field of Millbrook-Hinton-Belvidere Townships, Mecosta and Montcalm Counties, it was hailed new evidence of the need for a greater natural gas market in Michigan.

Beside it, the Midland Petrol & Gas Co. No. 2 B. Cornell, C SW SW section 4, same township, was dwarfed, though it produced at the rate of 49,926,000 feet a day from the Michigan sands topped at 1,275 feet and drilled to 1,304 feet, the second largest producer of five completed last week.

Two smaller gas wells were finished in the Michigan sands in the Hinton Township, Mecosta County, section of the same field. They were Columbia Oil & Gas Co. No. 1 Chris Satterlee, C NW SW section 24-13n-8w, Hinton, which made 10,780,000 feet daily at 1,328 feet, and Charles Bell No. 1, Elroy Waldorf, C NE NE section 25, same township, gauged at 2,000,000 feet at a depth of 1,321 feet, 9 feet in the Michigan Stray sands. The latter is an edge well.

Hirzel-Leland Development Corp. No. 1 Julius Plank, C SW SE section 33-11n-4w, Sumner Township, Gratiot County, made 5,000,000 feet daily from the Michigan sand at 978 feet, 34 feet in the shallow pay in a gas area near the Crystal oil field of Crystal and Ferris Townships, Montcalm County.

Three other wells in this area, two in New Haven Township and one in Sumner, all in Gratiot County, were nearing completion in the Michigan gas sands. They were Crystal Oil & Gas Co., Inc., No. 3-B Benjamin Shaver, C SE SE section 4-10n-4w, New Haven, and Gordon Oil Co. No. 1 Robert B. Shaver, C SE NW section 4; same and Allied Petroleum Corp. No. 1 Fred J. Graham, C NE SW section 31, Sumner Township.

A deeper test to the Dundee in Belvidere Township was dry, John Mercurio No. 1 G. H. and B. Whitcomb, NE NE NW section 7.

Crystal-Montcalm Completions

Fortney Oil Co. No. 4 H. and I. Fisher, NE NW NE section 2-10n-5w, Crystal Township, produced more than 300 bbls. the first 24 hours from a depth of 3,201 feet.

Burnstein Oil & Gas Co. No. 2 H Fisher, NW SE SW section 36-11n-5w, Ferris Township, Montcalm County, made 200 bbls. a day at 3,200 feet.

United Producers Oil & Royalty Co. No. 3 Ernest and Martha Conners, NE SW NW section 26, Ferris, drilled into the Dundee the previous week, made about 100 bbls. initially after acid treatment in the Dundee. It was placed on the pump.

Snyder Drilling Corp. No. 1 E. T. Williams, SW SW SE section 36, same township, added another 100 bbls. initially when drilled to 3,191 feet for completion in the Dundee in the northeast section of the field.

Jetter Oil Co. No. 1 Laurence Pitcher, SE SE NW section 5, Crystal, an extension test, will be plugged and abandoned as a dry hole.

Midland County

Pure Oil Co. No. 3 Martha Clark heirs, C S SE NE section 2-13n-2w, Jasper Township, Midland County, made 450 bbls. daily after acid treatment at 3,436 feet. Pure Oil Co. No. 2 J. P. Balch, C S SE SW section 2, Jasper, made 100 bbls. naturally, and was being acidized.

Pure Oil Co. No. 1-A John Holden, SE NW NE section 13, Jasper, had been drilled to 3,451 feet and was to be plugged back to treat with acid for a show in the Dundee several feet above.

Ogemaw County

Fortney Oil Co. No. 1 County Farm, SW SW NW section 20-22n-2e, West Branch Township, Ogemaw County, made an initial production of 200 bbls. after acid treatment in the Dundee at a total depth of 2,722 feet.

Beaverton-Gladwin

A single new producer in the Beaverton Township, Gladwin County field, added about 130 bbls. of Dundee initially. It was M. F. Whitehill No. 1 Joseph Bell, SW SW SE section 2-17n-2w, drilled to a total depth of nearly 3,900 feet.

Wildcat Duster

The seventh dry hole in nine months of testing in Ionia County was completed when Frank Lyons No. 1 Geiger, SW NW NW section 29-8n-8w, Otisco Township, was pronounced a "duster" at 2,972 feet. It was being plugged and abandoned.

This leaves only a single active test in the county, the Terry Dale Michigan Corp. No. 1 Edgar A. Tew, SW SW NE section 12-6n-7w, Berlin Township, reported nearing Dundee completion 4 miles south of Ionia city. It was shut down temporarily after striking a show of Dundee gas at about 2,860 feet.

It was reported Herbert Snell No. 1 Howe, section 19, North Star Township, Gratiot County, formerly abandoned as a dry hole through the Dundee and Monroe at about 4,000 feet, will be reopened for a Niagara test and deepened.

Tuscola County

Dr. Virgil R. D. Kirkham No. 1 Boyce Farm company, located SW SW NW section 24-14n-7e, Wisner Township, Tuscola County, was completed to pump about 10 bbls. a day from the Dundee formation, into which it was drilled more than 180 feet before swabbing.

State Lease Sale

Oil and gas rights on about 25,787 acres of state-owned land in nine northern Michigan Counties were auctioned at a recent lease sale in Lansing.

All of the tracts offered are held in fee by the state, whereas previously many former homestead lands taken over on tax title with surface rights subsequently granted to new occupants were offered for drilling under a clause whereby the state retained the oil and gas rights.

Arguments in the state's fight to retain these mineral rights were before the state supreme court last week in Lansing in a suit brought by Nick Kranch, of Detroit, on a developed state lease in Ogemaw County. Krench won a favorable decision contesting the state's right to retain the mineral rights when the case was tried in the Ogemaw County circuit court. It involves thousands of acres of state land upon which upwards of 50 producing wells have been drilled.

State-owned lands in Lake, Ogemaw, Mainstee, Mason, Gladwin, Missaukee, Saginaw, Arenac, Charlevoix and Newaygo Counties were bid in by a dozen operators at the sale.

Locations

Seventeen new state permits were issued, including 14 for tests in proved fields and three on wildcat locations.

The latter included two for Gratiot County, Oil Finders, Inc., No. 1 William G. Stahl, NW NW NW section 28-11n-2w, Emerson Township, and Associated Petroleum Co. No. 1 Reuben H. Yutzey, SE SE SW section 10-4w, New Haven Township, and one for West Michigan, Sylvania Oil Co. No. 1 F. P. Campbell and B. F. Barnett, NE SW SW section 10-17n-15w, Logan Township.

Those for proved fields include one in Beaverton Township, Gladwin County; four in Denver Township, Isabella County; two in Hinton and one in Sheridan Township, Mecosta County; one in Geneva and one in Greendale Township, Midland County; one in Crystal Township, Montcalm County; two in Ogemaw and one in West Branch Township, Ogemaw County.

Permits have reached a total of 355 compared with 286 as of June 20, 1935. The 1935 total, however, reached the high point of 700 due to greater drilling activity during the last six months than during the first half of the year. Indications now point to a similar experience in Michigan this year, particularly because of the shortage of crude to meet demands for independent refineries and a concentrated search for more gas to meet increasing market demands in the industrial centers of the state.

New Petroleum Register

The seventeenth annual issue of the Petroleum Register (1936) is now being offered by Dudley W. Moore, Tulsa, southwestern distributor. It contains 875 pages with information about 23,000 oil companies, 60 pages listing refining companies, 83 pages containing the names of 5,500 crude oil producers, a 150-page section listing 10,000 distributors of petroleum products, with detailed data on natural gasoline manufacturers, and a buyers' guide.

Other listings include 400 compounders and grease manufacturers: 250 pipe line companies; 73 pages of foreign concerns; an alphabetical list of 4,100 trade and brand names; 1,300 drilling contractors; 500 royalty companies; 5,000 names of executives: exporters; natural gasoline plants: marine transportation, and a list of active oil associations.

Copies may be obtained from The Oil and Gas Journal Book Department, 114 West Second Street, Tulsa, Okla. The price is $10, express prepaid.

Duval County Map

A new complete map of Duval County, Southwest Texas, showing ownership, leases and development in all fields of the area, is now available from Porter Regenold, Corpus Christi, Tex. Besides all of Duval County, the map includes parts of LaSalle, Webb, McMullen and Live Oak Counties and such fields as Lopez, O'Hern and Bruni. Drilling, which has been active in these fields and in the Duval County fields of Loma Novia, Seven Sisters, Government Wells and others, is shown brought up to date in the new map.

California Field Report

EXTENSION OR NEW SHALLOW POOL IN LOST HILLS DISTRICT

By L. P. STOCKMAN

LOS ANGELES, Calif., June 22.—The Associated Oil Co. completed No. 2 Williamson in the Lost Hills field, Kern County, and this outpost well, pumping 48 bbls. of 14.2 gravity oil per day from 1,143 feet, has either extended the Lost Hills field or proved up a new productive area. The well is 7,500 feet north of the nearest production in the northwestern end of the Lost Hills field. It started on the beam at the rate of 24 strokes per minute, reducing to 10 strokes per minute. This slow motion proved advantageous as production has shown an increase. Associated Oil Co. holds approximately 1,000 acres under lease and has fee title to about 1,500 more close to the well. Standard, Richfield, Ohio, Lincoln Petroleum Co. and several other operators hold leases in the immediate area. No. 2 Williamson is in section 2-26-20, about 500 feet northeast of No. 1 Williamson, which the Associated drilled in an effort to develop deep production. No. 1, which is shut in with extremely heavy fittings, encountered the high head water zone characteristic of the Lost Hills field and was put on the suspended list because the decreased diameter of the hole, resulting from the landing of several strings of casing, prevented further work. The Standard No. 1 United recently blew in flowing approximately 50,000 bbls. of hot salt water per day, but the company appears to have overcome this condition and the bit is approaching the 6,600-foot level.

The General Petroleum proved up the existence of shallow production in the Terminal Island district of Los Angeles Harbor, but after a test of several days resumed drilling. From the shallow zone, No. 1 Terminal was brought in flowing 85 bbls. of 14.6 gravity oil per day from 2,694 feet. The water shutoff was effected with a string of 9-inch casing landed and cemented at 2,430 feet and the hole was finished with a 4¾-inch liner carrying 266 feet of 100-mesh screen. It is on the property subleased from the Interstate Investment Co., which obtained the leases from the Los Angeles Harbor Commission a few months ago. The General Petroleum holds leases on 520 acres of potential oil land in the immediate area and as No. 1 Terminal is within 150 feet of the ship channel, much of the future development will be done by directional drilling. East of the General Petroleum's Terminal Island well, the Ford Motor Co. holds 40 acres partly occupied by an assembly plant but susceptible to directional drilling as this method of development would not interfere with operation of the plant.

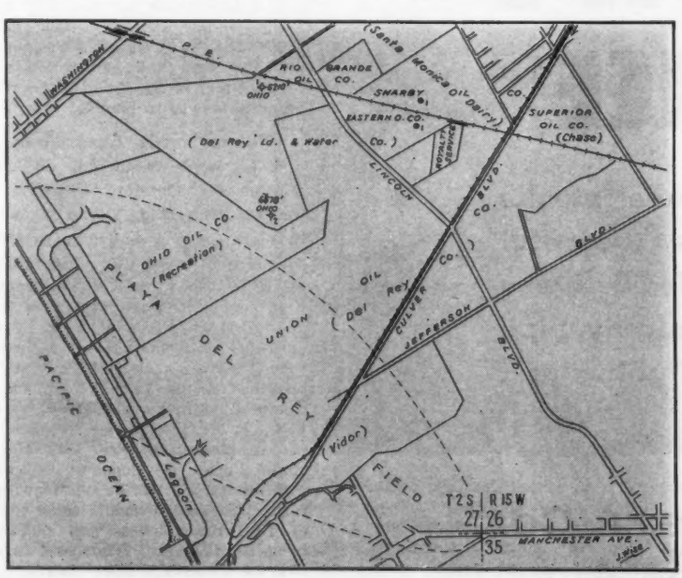
It has not been possible to correlate the shallow oil zone found in No. 1 Terminal with the productive horizon in wells in the Wilmington district at greater depths and consequently the significance of the Terminal zone cannot be appreciated. Other wells in the Wilmington district have been developing small production for months at an average depth of approximately 3,600 feet. Harbor Drilling Co. has completed No. 1 Wilmington in section 28-4-13, pumping 120 bbls. of 15.9 gravity oil per day from 3,566 feet after the hole had been finished with an 8⅝-inch water string landed and cemented at 3,400 feet and a 6⅝-inch liner carying 166 feet of 60-mesh screen. The well is 2 miles north of the General Petroleum No. 1 Terminal. The Codri Oil Co. No. 1 Wilmington in section 29-4-13, another project being drilled in the Wilmington district of Los Angeles Basin, is scheduled to be given an early production test as drilling operations have been concluded at 3,901 feet and the hole finished with a 4¾-inch liner including 40 feet of perforated.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	June 7		May 31			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	151,541	527,098
Gasoline	70,350	10,050	.....	.....	2,868,916	3,431,261
Kerosene	.....	.....	75,510	10,787	643,609	669,351
Foreign exports:						
Crude oil	77,480	11,069	180,434	25,776	4,323,897	4,527,587
Fuel oil	108,649	15,521	177,858	25,408	4,571,309	5,503,922
Diesel and gas oil	93,162	13,309	129,102	18,443	2,643,931	1,991,556
Gasoline	213,564	30,509	231,381	33,054	3,108,354	2,615,961
Kerosene	71,586	10,227	.....	.....	495,812	715,298
Other unfinished oil	.....	.....	.....	.....	16,894	56,161
Coastwise-domestic:						
Crude oil	.....	.....	154,639	22,091	3,278,879	2,436,238
Fuel oil	278,662	39,809	77,186	11,027	3,900,539	4,220,403
Diesel and gas oil	.....	.....	.....	.....	519,927	429,384
Gasoline	255,884	36,555	132,156	18,879	5,788,504	4,024,312
Kerosene	2,747	392	8,967	1,281	100,398	57,833

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	157,258
Gasoline	75,094	10,728	.....	.....	147,054	.....
Kerosene	.....	.....	.....	.....	.....	149,715
Asphalt	.....	.....	.....	.....	68,586	209,047
Lubricants	2,931	419	6,613	945	27,673	19,550
Foreign exports:						
Crude oil	38,136	5,448	120,421	17,203	1,321,047	1,355,979
Fuel oil	19,662	2,809	28,772	4,110	1,392,424	812,473
Diesel and gas oil	.....	.....	112,944	16,135	489,314	522,222
Gasoline	.....	.....	153,524	21,932	1,503,666	1,405,148
Kerosene	.....	.....	106,809	15,258	389,174	447,556
Lubricants	.....	.....	8,730	1,247	138,655	111,035
Coastwise-domestic:						
Fuel oil	144,630	20,661	152,059	21,723	3,383,786	1,958,711
Diesel and gas oil	.....	.....	42,981	6,140	316,875	134,687
Gasoline	67,549	9,650	160,212	22,887	2,260,381	2,136,761
Kerosene	.....	.....	10,469	1,496	69,401	38,437



Map showing holdings of various companies in vicinity of Eastern Oil Co.'s wildcat which has cored considerable oil sand and shows promise of discovering a new oil field in Los Angeles Basin

Montebello

Richfield Oil Co. focussed attention on the eastern extension of the Montebello field by completing No. 1 Nutt, flowing 3,364 bbls. of relatively clean 37.6 gravity oil and 3,100,000 feet of gas per day. No. 1 Nutt, bottomed at 5,901 feet, is the largest producer in the Montebello extension up to the present time and should stimulate additional development. Previous to completion of No. 1 Nutt, Universal Consolidated Oil Co. No. 1 Pasadena held the record for highest initial daily production, 1,900 bbls. of clean 38.1 gravity oil per day. Richfield Oil Co. is rigging up rotary for No. 1 Pasadena in section 5-2-11, should be spudded in within the next few days. The company's No. 1 Ciocca is rotating in a hard conglomerate below 6,600 feet. Universal Consolidated spudded in its second well on the Pasadena lease and has rig material on ground for No. 1-J on the Nutt lease, which will be drilled jointly with the Richfield Oil Co. The Richfield Oil Co. entered the eastern extension of the Montebello field as the result of a compromise in litigation involving this company and the Universal Consolidated. As a result of this compromise, the Richfield Oil Co. returned its stock interest in the Universal Consolidated Oil Co. to the treasury of the latter company, in consideration of which the Universal split up its leases in the Montebello extension into 10-acre blocks and gave the Richfield Oil Co. every alternate subdivided block. In addition, the Universal Consolidated granted some other considerations from an acreage standpoint and agreed to stop prosecution of a claim which the company held against the Richfield Oil Co.

In the Montebello field, St. Helens Petroleum Co., No. 7 P. & B., will be given an early production test. A formation test made late this week from a total depth of 5,585 feet and with the shoulder of the tester set at 5,451 feet and the valve open for 20 minutes, 46 stands of oil and 2 stands of drilling fluid was recovered. After 12 stands had been removed, oil flowed from the drill pipe for over 10 minutes notwithstanding the valve had been closed. The company may decide to complete the well at its present depth. Oil produced in the eastern extension of the Montebello field is highly desirable from a refining standpoint and should enable the company to reduce operating expenses incident to its refining and marketing activities.

The recent completion of several large wells in the eastern extension of the Montebello field has found operators totally unprepared for the abnormally large production secured. No difficulty is being experienced in the movement of crude oil out of the field but the amount of natural gas produced far exceeds the capacity of

the Universal Consolidated Oil Co.'s natural gasoline plant. Negotiations are in progress whereby operators hope to be able to tie into a plant of the Texas Co. and another small plant of the St. Helens Petroleum on the Monterey lease, which has been shut down for some time. The Universal Consolidated Oil Co.'s natural gasoline plant in the Montebello field is located on the Pasadena lease and has a daily capacity of 3,000,000 feet. The Texas Co.'s plant has a rated capacity of 1,500,000 feet and the natural gasoline plant of the St. Helens Petroleum Co. should be able to handle approximately 500,000 feet per day as soon as it is put back in working order.

Dominguez

The Union Oil Co. added two wells in the Dominguez field of Los Angeles Basin and increased its daily production 1,866 bbls. No. 44 Callender, bottomed at 8,103 feet but plugged back to 7,596 feet previous to completion, was finished in the Miocene. This well came in without swabbing and tanked 1,520 bbls. of clean 29.6 gravity oil in 24 hours. No. 42 Hellman, another Miocene completion, was brought in flowing 346 bbls. of clean 31.3 gravity oil per day from 6,737 feet. The Union has two potential producers scheduled for early completion and these wells should be followed into production within a short time by the Shell Oil Co. Nos. 7 and 85 on the Reyes lease.

Three wells were completed in the Redondo section of the Torrance field and several more should be completed in the immediate future. The Pongratz Oil Co. No. 1 Redondo, bottomed at 3,649 feet, was brought in pumping 177 bbls. of 17.1 gravity oil per day with the output cutting 5 per cent. The Regent Oil Co. completed its initial producer in the Torrance field, No. 1 Redondo, pumping 130 bbls. of 16.5 gravity oil cutting 10 per cent. It was bottomed at 3,567 feet and finished with a 6⅝-inch liner including 370 feet of perforated. The Sterling Oil Co. No. 2 Bryant was completed at 3,605 feet and, after being finished with a 6⅝-inch liner carrying 318 feet of perforated, was brought in pumping 172 bbls. of 15.6 gravity oil which showed a cut of 9 per cent. Eleven wells have been completed in the Redondo section of the Torrance field, in addition to three wells finished several months previous to the general initiation of work. At the present time, the Dumas-Brown Oil Co. No. 1 is pumping 198 bbls. per day; Dumas-Lewis Oil Co. No. 1 Redondo, 188 bbls. per day; Lawler Petroleum Co. No. 1, pumping 196 bbls. per day; Linderman Oil Corp. No. 1 Redondo, 239 bbls.; Pongratz Oil Co. No. 1 Redondo, 177 bbls.; Redondo Oil Corp. No. 1 Security, 136 bbls.; Regent Oil Co. No. 1 Redondo, 130 bbls.; W. C. Roach No. 1 Redondo, 201 bbls. per day; Sterling Oil Co. No. 2 Bryant, 172 bbls.; Tu-Jax Oil Co. No. 1 Redondo, 166 bbls., and the Walken Oil Co. No. 1 Redondo, 372 bbls. per day.

Kern River

The Kern River field, which has been especially active for several months, contributed three new wells. General Petroleum Corp. completed No. 43 Young, in section 14-28-27, pumping 305 bbls. of relatively clean 15.9 gravity oil per day. It was bottomed at 1,937 feet and finished with an 8⅝-inch liner which consisted of 136 feet of 150-mesh screen, 40 feet of blank pipe, 100 feet of 150-mesh screen and 110 feet of blank pipe. Drilling equipment was moved to No. 48 Young and preparations started for an immediate spud. National Oil Co. No. 2 Universal was brought in pumping 260 bbls. of relatively clean 15.9 gravity oil per day from 1,902 feet. The Republic Petroleum Co. completed No. 2 Fleishacker at 1,952 feet and it should be good for about 250 bbls. per day. The Vega Oil Co. No. 2 Kern Front, in section 11-28-27, proved a disappointment at 1,755 feet as it was good for only 60 bbls. of 14.9 gravity oil per day.

The General Petroleum completed a well in the Mount Poso field of Kern County when No. 30 Heisen, in section 16-27-28, was brought in pumping 239 bbls. of 18.1 gravity oil per day from 1,577 feet after the hole had been finished with a 6⅝-inch liner including 67 feet of 100-mesh screen. The Union Oil Co., after drilling a dry hole in an effort to extend the southern limits of the Mount Poso field, has not given up its attempt, as No. 11 Tribe, drilling near the 1,000-foot level. R. S. Lytle failed to develop commercial production in No. 3 Dorsey, section 26-27-28, from a depth of 1,421 feet deepened to 1,438 feet. The hole was bailed clean and there was no fluid. In the Round Mountain field of Kern County the Barnsdall Oil Co. completed No. 6 Caldwell, bottomed at 1,695 feet and finished with a 6⅝-inch liner carrying 69 feet of perforated. It pumped 164 bbls. of clean 18.1 gravity oil per day.

Mountain View

Two wells were put on production in the Mountain View field of Kern County, although only one of them was a new completion. This was No.

(Continued on Page 101)

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Completions and Operations in New York-Pennsylvania Gas Field

By R. C. CONINE

COUDERSPORT, Pa., June 19.—Cowanesque Gas Co. completed a 50,000,000 feet a day gasser on the George Stebbins farm, Clymer Township, Tioga County, to mark up the only completion in the New York and Pennsylvania Oriskany gas sand fields. The top of the sand was found at 4,160 feet and production was found 2 feet in the sand. Initial rock pressure was 2,020 pounds.

Pennsylvania Operations

G. L. Cabot was drilling at 1,190 feet on the Theodore Cobb farm, Genesee Township, Potter County. Sylvania Corp. was drilling at 4,805 feet on the George McCutcheon farm, Harrison Township, same county. New York State Natural Gas Co. was drilling at 4,928 feet on the F. Whitney farm, Bingham Township, same county. Sylvania was still idle at its location on the J. Steadman farm, Genesee Township, same county. G. L. Cabot was drilling at 440 feet on the Guy Thompson farm, same township. Potter Development Co. was drilling at 1,280 feet on the Crawford farm, Keating Township, same county. Beal McCandelless was spudding in on the Costello & Thompson farm, Genesee Township, same county.

William Snee and others was fishing at 6,365 feet on the Summit Hotel property, South Union Township, Fayette County. H. C. Drilling Co. was drilling at 2,550 feet on the Lesser & Louner farm, Kinzua Township, Warren County. Potter Development Co. was building a rig on the D. Spetz farm, Pittsfield Township, same county. New York State was drilling at 3,470 feet on the Otto Burnside farm, Clymer Township, Tioga County. Shoop and others was building a rig on the H. Gee farm, same township. G. I. Cabot, on the J. L. Lattimer farm, same township, was drilling at 3,080 feet.

New York Operations

G. L. Cabot was drilling at 982 feet on the Leo Harder farm, Alma Township, Allegany County. Schrack and others was spudding on the D. J. Crane farm, same township. Natural Gas Producers was shut down at 560 feet on the Eddy farm, Rome Township, Oneida County. Farriman and others was shut down at 3,000 feet on the Cash Willis farm, Howard township, Steuben County. Carpenter and others was shut down at 3,040 feet on the C. Matteon farm, Avoca Township, same county. Ross and others was shut down at 436 feet on the G. Wright farm, Portland Township, Chautauqua County. Southwestern was drilling at 1,775 feet on the B. G. Smith farm, Hanover Township, same county. G. L. Cabot staked a location on the Patricia O'Donnell farm, Willing Township, Allegany County.

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Among Gulf Coast Drilling Contractors

With the rapid succession of oil and gas discoveries being made on the Gulf Coast and in Southwest Texas at this time which will occasion further development in these respective areas, and with the increasing amount of wildcatting which is getting under way or which is due to start shortly, this summer and early autumn is expected to witness an unusually active drilling program throughout these districts. In this work, drilling contractors will play an important part as much of the contemplated new work is being undertaken by smaller, independent companies and operators who are not supplied with available rigs of their own.

With the anticipated new work, it is probable drilling contractors will have their hands full at least for the next several months. The new Corpus Christi field just east of Corpus Christi, where there are upwards of 35 rigs running steadily, is making use of contractors rigs to a sizable extent, which are being supplied largely by contractors of Southwest Texas, and the Refugio district.

Among the new important wildcats starting up in the lower Gulf Coast area is one in the extreme eastern part of Refugio County, which will be drilled by Al Buchanan of San Antonio for Benedum & Trees. Location is on the R. H. Welder land in the Juan Pabedan Survey, and the test will be drilled to 7,000 feet.

Jack Frazier, who drilled the discovery well of the Hardin field, in Liberty County, is to drill a wildcat for Circle W. Oil Co. near Deer Park, in eastern Harris County.

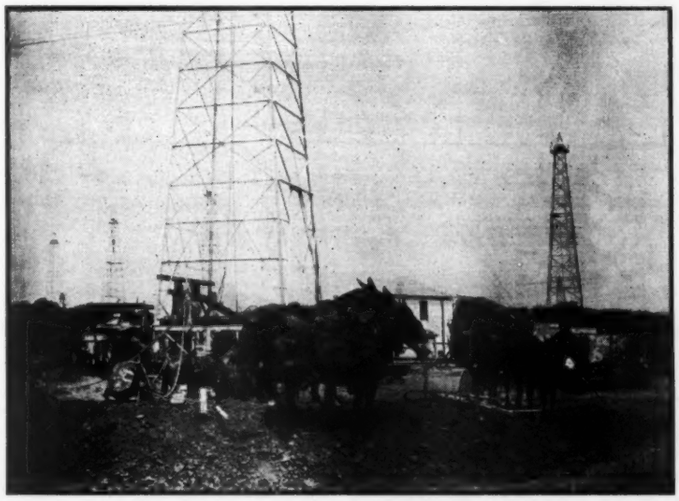
A little touch of bad luck, which can be expected in wildcatting, befell Henry DeArmand who has been drilling a well for himself in the Rosedale area, northeast of the Amelia field, Jefferson County. The test failed to find anything of commercial importance and is being abandoned.

W. C. Smith, who gets his share of the Texas Co. business, is about to complete a well for that company at Picketts Ridge, Wharton County. It is No. 22-A Pierce, which is in the sand to a total depth of 4,708 feet.

Harry Edwards, of the Edwards Drilling Co., started a test for himself at Picketts Ridge and drilled to 800 feet, and then was forced to skid over 15 feet and start a new hole, which now is down 1,500 feet.

There are no important changes in locations of contractors rigs. On wildcats, Smith & McDannald are drilling below 4,800 feet for Tide Water Oil Co. on a test on the Cow Bayou Prospect in Orange County. They are down 5,582 feet on a test they are drilling for themselves on the Lakeview prospect in Wharton County. So far this test apparently has encountered little of importance. It is 2,500 feet northwest of a gas well completed by these contractors in a 3,200-foot sand. Drilling has been delayed in this new wildcat with wire line core battle lost in the hole.

Noble Drilling Co. finally is able to drill ahead after a long, tedious fishing job in a wildcat being drilled for George W. Strake in the Cedar Lake area of Brazoria County. At a total depth of 6,738 feet, the hole was cleaned to bottom and a string of 9⅝-inch casing cemented to protect the hole. Plug has been drilled out and hole is being made.



With 30 to 35 rigs running in the Saxet Heights (Corpus Christi) field, just west of the city of Corpus Christi, that is the most active single area in Texas outside of the East Texas field. The field is being developed largely by independents, who have given a substantial volume of business to drilling contractors. The accompanying picture is a scene of activity in the new field, showing the digging of pits and rigging up for another test. Contractors in the field face problem of controlling high gas pressures, characteristic of many fields in the lower Gulf Coast district. Production in the field is from a 4,000-foot sand.

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Oklahoma Operations

BIGGEST PRODUCER HAS TWO HOUR OUTPUT OF 3,262 BBLS.

By
DAL DALRYMPLE

The Crescent field of Logan County provided the sensation of the past week in Oklahoma oil circles when the Continental Oil Co. No. 2 McConnell, NW SE SE section 28-17-4w, made a two-hour flow, indicating it is the largest producer to find pay in Oklahoma this year. When tested, it flowed 1,685-65 bbls. of oil the first hour and 1,577.02 bbls. the second hour, and was shut in because of lack of tankage. Gas gauged 41,375,000 feet.

Production was from the second Wilcox sand at 6,207 to 6,305 feet. Seven-inch casing was set at 6,016 feet, and at 6,140 feet it flowed 1,207 bbls. in nine and one-half hours. The big production came after deepening to the second sand. On preliminary tests it had flowed at the rate of 500 bbls. an hour. On the basis of the last two-hour flow, it would produce approximately 39,150 bbls. a day if it maintained that rate of flow for 24 hours. Tools were being rigged up at the No. 3 McConnell, SW SE SE section 28-17-4w, and operators were preparing to deepen several other wells in the field as a result of the showing at No. 1 McConnell.

Two areas in southern Oklahoma were holding interest of oil men, the Carter-Love County sector and the Jackson-Tillman County area. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1-A Westheimer & Daube, SW SE SW section 27-6s-2e, wildcat northeast of Marietta, in Love County, continued to show as a small Viola lime producer. It swabbed and flowed 153 bbls. in 24 hours ending Friday and 72 bbls. in the period ending Saturday. It was producing from Viola lime at 2,430-2,790 feet, after plugging back from 7,363 feet and acidizing. Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW section 26-6s-2w, in northwestern Love County, was drilling by lost pipe at 8,147 feet. Tools were being moved in for a new Love County wildcat at Riddle and others No. 1 D. J. Johnson, C SW SE section 20-8s-2w, south of Leon and about a mile from the Red River. Across the line in Carter County, Carter Oil Co. and others No. 1 Voorhees, C SE SW section 34-5s-2w, was coring at 6,867 feet, looking for the deep pay. In the Fox field of Carter County, Gulf Oil Corp. and others No. 8 Johnson, C SW SW section 28-2s-3w, had changed boilers and was preparing to resume drilling at 5,515 feet. It is the second deep test in the Fox area. In Tillman County, Gulf Oil Corp. No. 1 Wearmouth, SE NW SE section 31-1s-18w, wildcat near Frederick, was drilling and coring below 4,881 feet in lime and Simpson Dolomite. As a result of discovery of the Simpson formation in the Wearmouth, reports that an 8,000-foot test will be drilled in the Jackson-Tillman County area were revived. No official announcement had been made, however.

Kewanee Buys in Healdton

Of interest to southern Oklahoma operators was the announcement of J. B. Steele of Tulsa, superintendent of the Kewanee Oil & Gas Co., that his company had bought the interests of the Coline Oil Co. in the Healdton district of Carter County. The deal includes 70 producing wells with daily production of 450 bbls.

The Oklahoma City field continued to provide the bulk of the field news of the week in Oklahoma, despite definite limitation of the Capitol extension area. Anderson-Prichard Oil Corp. No. 1 Hare, SE NW NE section 22-12-3w, just inside the city limits near the north edge of the field, made potential of 17,183 bbls. of oil, with 11,000,000 feet of gas. Total depth was 6,470 feet. On the east edge of the north sector, Phillips Petroleum Co. No. 1 Meadors, C N half N half NW section 26-12-3w, flowed at the rate of 36 bbls. an hour while drilling at 6,423 feet, with gas gauging 16,000,000 feet. It is one block north of British-American Oil Co. No. 1 Summitt, which found Wilcox sand dry at 6,326-39 feet, but averaged 29 bbls. of oil an hour from School Land sand at total depth of 6,509 feet. Sunray Oil Co. and Phillips Petroleum Co. No. 5 State, west of the state capitol, made potential of 6,902 bbls. and 3,000,000 feet of gas. Same operators were completing No. 4 State, first well east of the capitol building. It was flowing 150 bbls. an hour while drilling at 6,466 feet.

Oklahoma County

An even dozen wells were completed in the Capitol extension of the Oklahoma City field. The largest was Phillips Petroleum Co. and British-American Oil Co. No. 1 Warr, NW SE SE section 22-12-3w, which made potential of 16,146 bbls. of oil from second Wilcox sand topped at 6,365 feet; total depth 6,522 feet. It flowed 4,065 bbls. in six hours. Phillips Petroleum Co. and Black Gold Petroleum Co. No. 3 Annie Sawyer, SE SW NE section 22-12-3w, Block 16, McNabb-Hunt Addition, topped second sand at 6,405 feet; total depth 6,494 feet. It flowed 3,286 bbls. in six hours, making potential of 13,159 bbls. Same operators No. 4 Annie Sawyer, SE SW NE section 22-12-3w, Block 15, McNabb-Hunt Addition, topped second sand at 6,388 feet; total depth 6,484 feet. It flowed 2,560 bbls. in six hours, making potential of 10,282 bbls. Same operators No. 6 Annie Sawyer, NW NE NE section 22-12-3w, flowed 2,226 bbls. in six hours and made potential of 8,898 bbls. Top of second sand was 6,401 feet; total depth 6,472 feet. Phillips Petroleum Co. No. 1 Mayo, NW SW SE section 22-12-3w, made potential of 11,291 bbls., after flowing 2,649 bbls. in six hours. Top of second sand was 6,386 feet; total depth 6,516 feet. Same operators No. 1 Beam, NW SW SE section 22-12-3w, Block 1, Northeast Heights Addition, topped second sand at 6,387 feet; total depth 6,509 feet. It flowed 2,146 bbls. in six hours, making potential of 8,655 bbls. on gas lift.

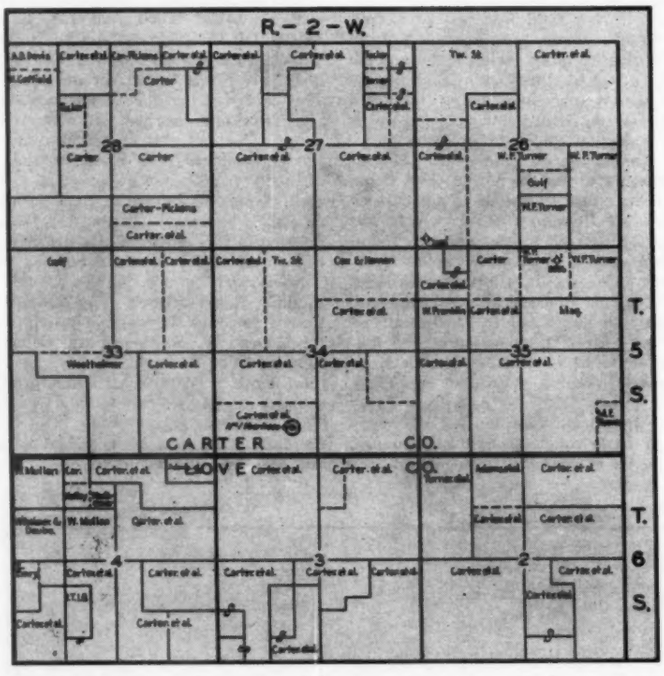
British-American Oil Co. No. 1 Elliott Place, SW SW NW section 23-12-3w, made potential of 14,796 bbls., based on six-hour flow of 3,576 bbls. Top of sand was 6,416 feet; total depth 6,468 feet. Sunray Oil Co. and Phillips Petroleum Co. No. 1 State, NE cor. section 27-12-3w, on state-owned property, topped second Wilcox sand at 6,351 feet; total depth 6,460 feet. In six hours it flowed 2,625 bbls., to make potential of 11,264 bbls. Deepened to 6,515 feet, it flowed at the rate of 325 bbls. an hour. It was the first well completed on state-property. Barnsdall Oil Co. No. 1 Hopps, NW SW NE section 22-12-3w, was completed at 6,459 feet, total depth, in second sand topped at 6,426 feet. It flowed 173 bbls. in six hours, making potential of 693 bbls. on gas lift. Big Chief Drilling Co. No. 1 Hagenmeister, SE NE SW section 15-12-3w, at the extreme northern tip of the extension area, topped Simpson horizon at 6,365 feet; first Wilcox sand 6,415 feet; second sand 6,500 feet, dry; total depth 6,510 feet. It flowed 89 bbls. in six hours from upper Simpson, and made potential of 378 bbls.

Several Abandoned

Barnsdall Oil Co. No. 4 Guthrie, SW SW SE section 15-12-3w, was abandoned at 2,209 feet, total depth. Anderson-Prichard Oil Co. No. 2 Proffitt, NE SW SE section 15-12-3w, was abandoned at 1,024 feet, total depth. Both wells were on the northern edge of the extension.

Anderson-Prichard Oil Co. No. 1 Cooke, NE NE NW NE section 22-12-3w, was deepened 2 feet to 6,474 feet and recompleted. It flowed 4,456 bbls. in six hours, making potential of 18,714 bbls. Empire Oil & Refining Co. and Heenan & Coe No. 1-A Levy, SE SE SE NW section 22-12-3w, was plugged back from 6,498 feet to 6,493 feet to shut off water. Barnsdall Oil Co. and others No. 1 Banks-Geyer, SE SW SE section 15-12-3w, first well to be completed north of the city limits, plugged back from 6,506 feet to 6,484 feet to shut off salt water. It made potential of more than 20,000 bbls. before water intruded.

Locations abandoned follow: Barnsdall Oil Co. No. 5, No. 6, No. 7 and No. 8 Guthrie, all in section 15-12-3w, north of the city limits; Ander-



Carter Oil Co. and others No. 1 Voorhees, in section 34-5s-2w, Carter County, is being watched with interest as it nears deep pay sands

(Mid-Continent Map Co., Tulsa, Okla.)

son-Prichard Oil Co. No. 3 Proffitt, and same operators No. 1 Mitchell, both in section 15-12-3w, in the north end of the extension; Fairfax Oil Corp. No. 2 Russell, SE SE SW section 15-12-3w; Black Gold Refining Co. No. 1 White, SW SE SW section 15-12-3w, and same operators No. 1 Noll, SE SW SE SW section 15-12-3w.

In the Edmond field, Marathon Oil Co. No. 11 Dahl, NW SW SE section 31-14-3w, topped second Wilcox sand at 6,655 feet and was completed at 6,724 feet, total depth. It flowed 708 bbls. in 12 hours, and, after a shot, made potential of 3,780 bbls. Production was from Simpson Dense, topped at 6,432 feet, and second sand. Same operators No. 2 Dahl, Account 2, SE NE SW section 31-14-3w, topped Simpson at 6,440 feet; first Wilcox 6,550 feet; second Wilcox 6,-660 feet; total depth 6,711 feet. It flowed 396 bbls. in four hours after a shot and made potential of 2,378 bbls., completed.

No new work in Oklahoma County was reported.

Production

Estimated daily average production of Oklahoma for the week ending June 20 and for the preceding week is as follows:

	Barrels	
	June 20	June 13
Allen	11,150	9,350
Asher-West Asher	775	800
Burbank	7,675	7,650
South Burbank	14,750	15,750
Balance Osage	23,500	23,500
Blackwell district	4,800	4,850
Bristow-Slick	8,350	8,375
Chandler	3,925	4,050
Crescent	5,300	5,500
Cromwell	3,700	3,700
Cushing-Shamrock	11,575	11,625
Duncan district	4,025	4,000
Edmond	11,975	12,825
Fish	8,759	8,575
Fitts	55,700	50,700
Gray	1,650	1,600
Graham	4,125	4,150
Healdton	9,225	9,275
Hewitt	4,475	4,475
Holdenville	1,050	1,050
Keokuk	6,000	6,750
Konawa	1,625	1,775
Lucien	12,800	12,950
Marshall-Lovell	1,000	975
Oklahoma City	125,725	151,275
Olympic	8,075	8,000
Papoose	1,050	1,075
Polo	3,250	3,200
Sasakwa and townsite	3,800	3,100
Sholem-Alechem	3,625	3,650
Seminole field:		
Bowlegs	12,950	12,450
Carr City	6,250	6,825
Earlsboro	7,350	7,325
South Earlsboro	825	825
East Earlsboro	10,775	10,725
Little River	13,525	13,550
East Little River	1,275	1,175
Maud	975	975
Mission	2,525	2,550
Seminole	10,875	11,325
East Seminole	3,700	3,300
Searight	5,275	5,350
Total Seminole	76,300	76,375
St. Louis-Pearson	25,800	25,875
Tatums	3,325	3,350
Tonkawa-Garber-Thomas	5,475	5,500
Wewoka	4,025	4,075
Yale-Jennings	4,000	4,025
Other pools	63,991	63,500
Total Oklahoma	546,350	547,450

Pontotoc County

Magnolia Petroleum Co. No. 5 Metropolitan Life, SE NW NE section 27-2-7, in the Fitts field of Pontotoc County, topped Bromide at 4,095 feet and was completed at 4,280 feet, total depth. It flowed 754 bbls. in two hours and made potential of 3,281 bbls. Same operators No. 6 Metropolitan Life, NW NE NE section 27-2-7, flowed 776 bbls. in 1 hour and 45 minutes and made potential of 2,-635 bbls. It topped Bromide at 4,150 feet and was completed at 4,275 feet, total depth. The No. 10 Metropolitan Life, NW NW NE section 27-2-7, topped Bromide at 4,170 feet; total depth 4,295 feet. It flowed 745 bbls. in two hours and made potential of 2,984 bbls., completed. All three wells were acidized with 10,000 gallons before completing. Same operators No. 1 Reeves, SW NE NE section 35-2-6, topped Viola lime at 4,315 feet; had water in the hole at 4,573 feet, total depth, and plugged back to 4,513 feet to complete. After acidizing, it swabbed 168 bbls. in 2 hours and 45 minutes and made potential of 272 bbls.

E. H. Moore and others No. 1 Moody, NW cor. section 26-2-7, flowed 487 bbls. in three hours after first acid treatment and 333 bbls. in two hours after second treatment, making potential of 3,014 bbls., completed. Top of Viola lime was 3,925 feet; Bromide 4,185 feet; total depth 4,314 feet. Mid-Continent Petroleum Corp. No. 2 McKoy, SE SE SW section 20-2-7, topped Bromide at 4,242 feet; total depth 4,272 feet, completed. It was acidized and flowed 290 bbls. in 12 hours; acidized again, and flowed 350 bbls. in four hours, making potential of 1,748 bbls. Boettcher Oil & Gas Co. No. 3 Burris, C N half NW NW section 27-2-7, topped Gilcrease sand at 1,435 feet and was completed as a gasser at 1,649 feet, total depth. Gas gauged 4,500,000 feet.

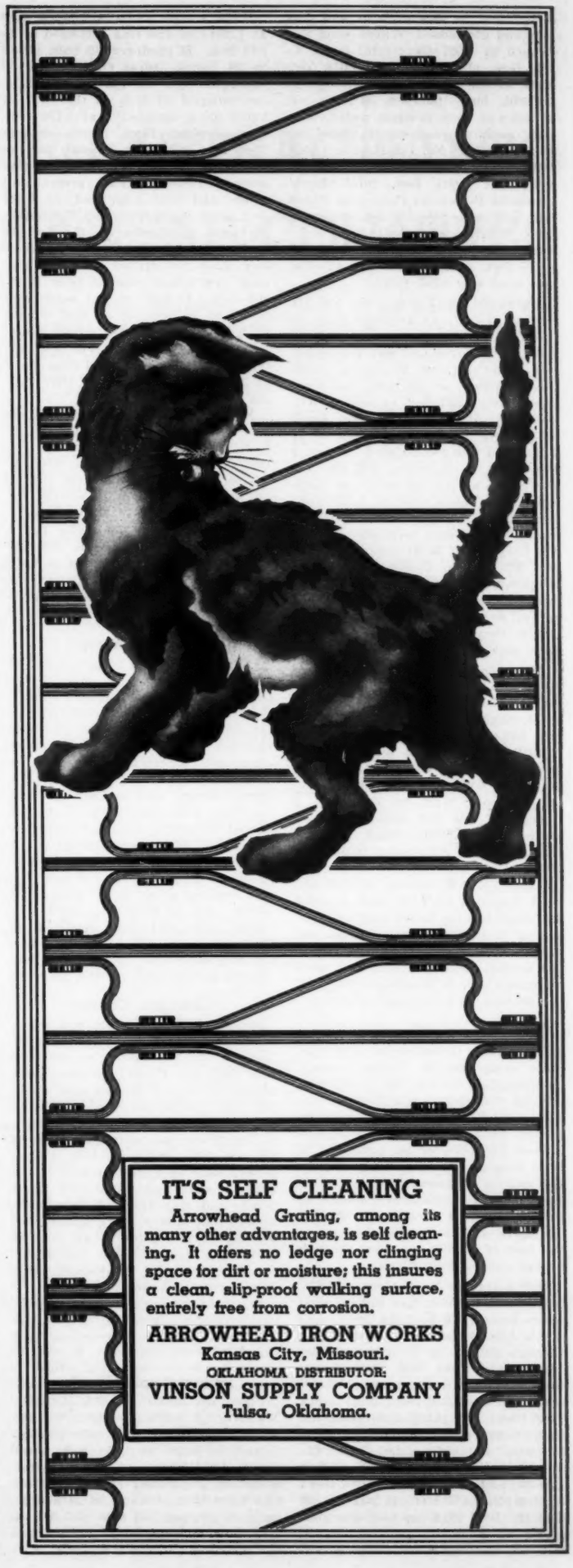
Joe Perrine and others No. 1 Roberts, NW NW SW section 31-5-5, in the Bebee pool, topped Mayes sand at 1,940 feet; Woodford shale 2,090 feet; total depth 2,165 feet. It pumped 30 bbls. in 24 hours, completed. Morris & Tindal No. 4 Call, NW cor. section 22-5-8, in the Allen area, was dry and abandoned at 778 feet, total depth. Top of sand was 771 feet.

The following new work was reported in Pontotoc County: Blackstock and others No. 2-A Lewis, SE cor. section 19-2-7, rig; same operators No. 2-A Moody, SW cor. section 23-2-7, rig; Magnolia Petroleum Co. No. 4 M. Norris, SE SW SE section 21-2-7, rigging up rotary; E. H. Moore and others No. 2 Moody, NE NW NW section 26-2-7, location; Sinclair Prairie Oil Co. No. 10 Burris, NE NW NW section 27-2-7, cellar; same operators No. 11 Burris, NW NE NW section 27-2-7, cellar; same operators No. 10 Potts, C SE SW section 28-5-8, machine.

Seminole County

Completions in Seminole County were as follows: W. B. Pine No. 3 Cheparney, NE NE SW section 12-5-7, topped Wilcox sand at 4,220 feet; total depth 4,233 feet. It swabbed 867 bbls. in 24 hours. Sinclair Prairie Oil Co. No. 1 King, SE SW NE section 12-5-7, swabbed 650 bbls. in 20 hours before shot, and 1,032 bbls. in 19 hours after shot. Top of Wilcox sand was 4,165 feet; total depth 4,-182 feet. Exchange Drilling Co. and others No. 1 Mills, NW NE SE section 19-9-7, topped Cromwell sand at 3,475 feet; total depth 3,494 feet. It flowed 1,080 bbls. in 24 hours and 2,520 bbls. in 48 hours. Wood Oil Co. No. 1 Harber, SE NE NW section 19-9-7, topped Cromwell sand at 3,461 feet; total depth 3,479 feet. It pumped 131 bbls. of oil and 130 bbls. of water in 24 hours. Creekmore-Wolf, Inc., No. 1 Campbell, SW NW NW section 20-9-7, flowed 351 bbls. in 24 hours from Cromwell sand, topped at 3,460 feet; total depth 3,468 feet. Carter Oil Co. and others No. 3 Aldridge, C-28, C N half SE NW section 35-11-6, topped Misener sand at 4,138 feet, total depth 4,151 feet, and made potential of 358 bbls. of oil.

Commercial Drilling Co. and J. N. O'Donnell No. 1-A Grisso, C NE SW section 23-9-6, ripped pipe and acidized Hunton lime, topped at 3,910 feet.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but failed to recover load and was dry and abandoned. Wilcox sand was topped at 4,087 feet; total depth 4,092 feet; plugged back to 4,078 feet, shot, acidized with 1,500 gallons and 215-bbl. load, pumped 50 bbls. oil gross, and then pumped water, with only a showing of oil. R. W. Vierson and others No. 1-A Burdon, C NE SW section 28-8-6, was dry and abandoned at 2,505 feet, total depth. Amerada Petroleum Corp. and others No. 1 Wyant, NW SW SE section 3-10-5, failed to get results from acidizing and was dry and abandoned at 4,715 feet, total depth. Top of Wilcox sand was 4,707 feet.

Texas Co. No. 2 Janey, NE NE SW section 11-7-6, was deepened from 4,202 feet to 4,281 feet, swabbed 1,136 bbls. in 48 hours and was recompleted. Mid-Continent Petroleum Corp. No. 4 Bruner, an old well, was deepened from 4,292 feet to second Wilcox sand at 4,353 feet; total depth 4,372 feet. It pumped 35 bbls. in 24 hours and was recompleted. Superior Oil Corp. No. 2 Grisso, NE SE NW section 35-9-6, an old well, was deepened from 4,008 feet to 4,176 feet, pumped 7 bbls. of oil and 75 bbls. of water in 24 hours, recompleted. Gulf Oil Corp. No. 1 Scott Fife, C W half NE NW section 11-10-6, an old well deepened from 4,164 feet to 4,183 feet, was acidized and pumped 595 bbls. of oil and 79 bbls. of water in 24 hours, recompleted. Top of Hunton lime was 4,166 feet.

New work in Seminole County: Texas Co. No. 1 Janey, SE NE SW section 11-7-6, an old well being deepened, rigging up standard tools at 4,216 feet; Exchange Drilling Co. No. 2 Mills, NE NE SE section 19-9-7, moving in tools; Wood Oil Co. No. 1 Reed, NE NW SE section 19-9-7, moving in tools; Gulf Oil Corp. No. 2 Tiger, SW NW SW section 6-9-9, location; J. Garfield Buell No. 2-A Polk, C N half NE section 10-9-9, machine; Gulf Oil Corp. No. 1 Scott, C W half SE NW section 11-10-6, old well deepened to 4,180 feet, pumped 202 bbls. in nine hours and was preparing to acidize; Carter Oil Co. and others No. 1 Anthony, C W half SW NE section 11-10-6, building rig; same operators No. 2 Randolph, NW SE NE section 35-11-6, building rig.

Carter County

Nine wells, including one dry hole, were completed in Carter County. Simpson-Fell Oil Co. No. 1 Merrick, SW SE NW section 9-2s-2w, had lime at 1,184-1,509 feet; and Conglomerate at 1,513-29 feet, total depth. It flowed 197 bbls. of oil naturally in nine hours. After acidizing with 2,000 gallons it flowed 315 bbls. in 14 hours. It then was acidized with 5,000 gallons and flowed 315 bbls. in 12 hours and continued flowing at the rate of 10 bbls. an hour through tubing choke.

Cox & Hamon No. 2 Mena, SE SW NE section 6-2s-2w, had broken sand series from 1,579 to 2,358 feet; total depth 2,500 feet. It flowed 185 bbls. through tubing in 24 hours. Louis Sikes No. 4 Byrd, NW SE SW section 4-2s-2w, had several sand series from 1,108 to 1,210 feet; total depth 1,338 feet; and pumped 81 bbls. the first 16 hours and 48 bbls. the next 24 hours. Louis Sikes and Carter Oil Co. No. 3 Byrd, NE SW SW section 4-2s-2w, had first sand at 1,383 feet; total depth 1,441 feet. It pumped 62 bbls. the first 24 hours and was completed as a 10-bbl. pumper. C. P. Williams and others No. 1 Brady, SW NE SW section 19-1s-2w, topped sand at 1,250 feet and was bottomed at 1,305 feet. It produced 35 bbls. of oil in 24 hours. Ideal Oil Co. No. 10 Scroggins, SW SE SE section 32-3s-3w, pumped 55 bbls. in the first 24 hours after completing at 1,132 feet, total depth. First oil sand was topped at 825 feet. Turman Oil Co. No. 12 P. Rexroat "E," NE NE SW section 10-4s-2w, had several oil sands and was completed at 1,807 feet, total depth, pumping 75 bbls. in 24 hours. Wolverine Oil Co. No. 114 J. H. Dillard, C E half NW SW section 22-4s-2w, drilled to 2,280 feet, total depth, and plugged back to 2,801 feet. It had several sands and produced 20 bbls. of oil and 3 bbls. of water in 24 hours. Louis Sikes, Inc., No. 3 Eaves, NE NW NW section 5-2s-2w, was dry and abandoned at 2,437 feet, total depth, after failing to fish out swab.

New work in Carter County: Louis Sikes, Inc., No. 5 Byrd, NW SE SW section 4-2s-2w, rigging up tools; Coline Oil Co. No. 1 Higgins, SW SW NE section 7-2s-2w, old well, rigging up to deepen; Simpson-Fell Oil Co. No. 6 Davis, SE SW NW section 9-2s-2w, rigging up; Magnolia Petroleum Co. No. 5 Hefner-Mills, SW NW NE section 27-2s-3w, drilling at 2,402 feet; Cox & Hamon No. 2 Daney, SW SW SW section 4-4s-3w, old well moving in machine to deepen.

Hughes County

Gulf Oil Corp. No. 1 Tiger, NW NW SW section 6-9-9, east side of the Olympic area, in Hughes County, topped Senora sand at 1,669 feet; total depth 1,698 feet; was shot and swabbed 100 bbls. of oil in 24 hours, completed. Horman Oil Co. No. 1-A Simon, NE NE NW section 9-9-9, topped Senora sand at 1,678 feet; total depth 1,693 feet. After a shot, it flowed 75 bbls. in 24 hours, completed. M. A. Wilder and others No. 1 Barnett, NW NW SE section 27-9-10, produced 3,000,000 feet of gas and was completed at 2,331 feet, total depth. Top of sand was 2,308 feet.

One new test was reported in Hughes County. Blackwell Oil & Gas Co. and others No. 1 Homahte, SW NE NE section 1-9-10, was a location.

Okfuskee County

Blackwell Oil & Gas Co. and others No. 1 Dalton, SE SE NE section 36-10-8, in the Olympic area, was the only Okfuskee County producer completed. It topped Senora sand at 1,729 feet, was bottomed at 1,747 feet, and flowed 400 bbls. in 24 hours.

Earl Evans and others No. 1 James, SE SW NW section 36-10-8, topped Senora sand at 1,737 feet, had a hole full of water at 1,764 feet, total depth, and was dry and abandoned. Stekoll and others No. 1 Yahola, SE SW SW section 2-10-11, had sand at 2,509 feet, and was dry and abandoned at 2,530 feet, total depth, with a hole full of water.

Sinclair Prairie Oil Co. No. 2 Carolina, NW NW SW section 31-10-9, the only new Okfuskee County test, had spudded.

Pottawatomie County

Clyde Alexander No. 1-A Mitchell, NW NE NE section 3-6-4, in the St. Louis area of Pottawatomie County, topped Dolomite at 4,266 feet; total depth 4,274 feet, completed. After acidizing, it pumped 125 bbls. of oil and 2,400 bbls. of water in 24 hours; later, it pumped 150 bbls. of oil and 2,400 bbls. of water in 24 hours. Phillips Petroleum Co. No. 2 Duff, NW NW SW section 10-7-4, an old well, was plugging back from 3,998 feet to 3,466 feet, was shot and swabbed 60 bbls. in 8 hours and then pumped 68 bbls. in 24 hours, recompleted.

The only new test in Pottawatomie County was Magnolia Petroleum Co. No. 1 Denton, NE NW SW section 22-7-4, rigging up standard tools to drill deeper.

Creek County

Three out of four completions in Creek County were producers. They were: Anthony No. 1-A Bruner, NW NE NE section 4-16-12, produced 45 bbls. of oil and 1,500,000 feet of gas in 24 hours from sand at 2,054-59 feet, total depth. Guy Harris and others No. 1 Sellen, NW SE NW section 13-17-7, swabbed 40 bbls. of oil from Jones sand at 1,994-2,037 feet; total depth 2,041 feet. Deep Rock Oil Corp. No. 8 Brinton, SW NE SW section 6-18-7, had Bartlesville sand at 2,530-62 feet, total depth, was shot with 150 quarts and pumped 20 bbls. of oil in 24 hours. The failure was Indo Oil Co. No. 1 Wataski, SE NW NE section 4-17-10, dry and abandoned at 2,715 feet.

New work in Creek County follows: Big Four Petroleum Co. No. 5 Templin, SE cor. section 34-19-8, machine; Sinclair Prairie Oil Co. No. 17 Jones, SW SE NW section 3-17-7, an old well cleaning out to deepen; same operators No. 5 Roberts, NW SW SW section 8-16-9, an old well rigging up to deepen.

Okmulgee County

The only completion in Okmulgee County was Aggis Drilling Co. No. 5-A McKinney, NW NW SW section 16-15-14. It had sand at 826 to 846 feet and pumped 10 bbls. of oil in 24 hours.

Two new operations were reported in Okmulgee County. Reliance Oil Co. No. 6 Cowan, NW NE SW section 26-16-11, spudded. Ladd No. 2-A Scott, SE NE SE section 15-15-14, spudded.

Tulsa County

Two failures were reported in Tulsa County. Cummings No. 6 Bunger, CNL S half SW NW section 27-17-13, was dry and abandoned in sand at 2,125-33 feet, total depth. Mechlin No. 2 Luster, NW SE NE section 14-19-13, dry and abandoned at 1,338 feet, total depth.

Marshall County

John W. Knaggs No. 2 J. A. Adams, SW SE SE section 31-7s-6e, in Marshall County, lost drill pipe in the hole and was dry and abandoned at 405 feet, total depth.

Lincoln County

Slick-Urschel Oil Co. and Tide Water Oil Co. No. 1 Ransin, SW SW NW section 32-15-3, Lincoln County, topped Wilcox sands at 5,145 feet and 5,201 feet, drilled to 5,220 feet, total depth, the cores tasted salty and it was dry and abandoned.

Caddo County

Marathon Oil Co. No. 4 Marchand, SW SE NW section 2-5-9w, in the Cement pool of Caddo County, the deep pay discovery well, was completed at 6,367 feet, total depth. On completion test, it flowed 1,077 bbls. of oil, with gas gauging 71,000,000 feet, in 24 hours. It opened a new producing sand for the Cement area at 6,285 to 6,367 feet. F. A. Turner and others No. 1 Sapin, NE NE SW section 1-5-11w, wildcat south of Stecker, was dry and abandoned at 2,500 feet, total depth.

One new test was started in Caddo County. Marathon Oil Co. No. 10 W. D. Wade, NW NE SW section 2-5-9w, was moving in.

Grady County

Carter Oil Co. No. 2 W. White, SW SE SE section 21-3-5w, an old well in the Knox area of southeastern Grady County, was deepened from 1,780 feet to sand at 1,822-32 feet, total depth. It produced 57½ bbls. of oil and 7½ bbls. of water in 24 hours and was recompleted.

Art Holt and others No. 1 Ramsey, NE SE NE section 31-5-8w, the only new test in Grady County, was a wildcat location southeast of the Cement pool.

Southwestern Oklahoma

Long-Yingling & Lauck, SE SW SW SE section 3-7s-5w, in the Oscar area of Jefferson County, topped sands at 1,074 feet and 1,083 feet, was bottomed at 1,105 feet, and pumped 12 bbls. of oil in 24 hours.

In Comanche County, Hightower and others No. 1 J. Allen, SE SE NE section 28-2-10w, was dry and abandoned at 705 feet, total depth.

In Jackson County, Gulf Oil Corp. No. 5 Boucher, NW SE SW section 32-1-19w, drilled to 2,786 feet, plugged back to 2,665 feet, shot casing and swabbed 46 bbls. in the first 24 hours and 51 bbls. the next 24 hours. It was completed as a 35-bbl. pumper. John Dickson and others No. 1 W. B. Wright, NE NW SE section 19-1-19w, wildcat, was abandoned at 3,200 feet, total depth, in hard white lime.

Two new tests were started in Jackson County. Gulf Oil Corp. No. 1 Southerland, NE NE NW section 6-1s-19w, was rigging up tools. W. A. Delaney No. 1 R. H. Mock, C NE SW section 32-1-20w, wildcat, was rigging up.

One new test was reported in Kiowa County. Burns & Moore No. 1 Bluebaugh, NE NE SE section 2-6-17w, had spudded with machine.

A.S.M.E. at Dallas

DALLAS, Tex., July 20.—Members of the American Society of Mechanical Engineers, met at Dallas, from June 15 to June 20, for their semi-annual meeting. Papers were read on methods used in drilling and pumping wells, equipment and machinery used in this work, manufacture of supplies and equipment for the oil and gas industry, types of engines now being manufactured and the fuels being refined and used, utilization of natural gas fuel and fuels and lubricants used by railroads.

Many men in the oil and gas industry attended. The oil and gas power meeting of the society is to be held at Ann Arbor, Mich., June 24-27, at which still more representatives of the oil and gas industry are expected.

William L. Batt is president of the association, which was given cooperation in this series of meetings by the Dallas Technical Club, American Petroleum Institute, American Society of Civil Engineers, American Institute of Mining Engineers and American Institute of Electrical Engineers.

W. V. Bowles and Vic Borsodi are preparing to drill a well on Amerada Petroleum Corp.'s block in the Cheneyville field, Rapides Parish. It will be No. 1 Haas, a semi-wildcat.

Kansas Developments

By
DAL DALRYMPLE

WILDCATTERS ATTRACTED TO WESTERN KANSAS COUNTIES

Wildcat operations are continuing in Kansas at the rapid pace set early in the spring, with several tests in undeveloped areas being started each week and several tests being completed, opening new pools or proving disappointments. The week just ended saw wildcat operations extended into more new territory.

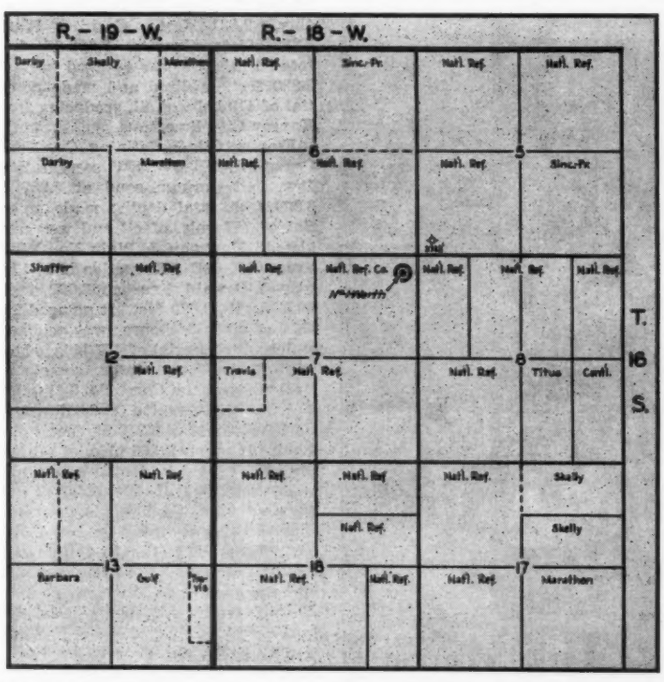
Meade County, in the southwestern part of the state adjoining Beaver County, Okla., gained one of the new wildcat tests. It was the Pacific Midwest Oil Co. No. 1 Rexford, NE SE SW section 8-30-29w, 6 miles south of Copeland. It is in rank wildcat territory, many miles from either oil or gas production. The big Hugoton gas field is to the southwest.

The Pacific Midwest Co., discoverer of the Weed Patch pool in California, has a block of 12,000 acres in Meade and Gray Counties. This is the third test ever started in Meade County. A shallow failure was drilled near Fowler in 1911, and in 1928 the Blackwell Oil & Gas Co. drilled a test in section 9-33-28w, and abandoned it at 4,650 feet.

Another attempt to open a pool in Kingman County is being made by W. C. McBride, Inc., at No. 2 Wooldridge, SW NE SE section 16-27-7w, wildcat northeast of Kingman. Location is on a 3,000-acre block. The operators' No. 1 Wooldridge was dry and abandoned in 1934. A nearby well drilled by D. P. Fleeger and Carter Oil Co. produced oil for a short time but eventually was abandoned.

Olson Drilling Co. and Watchorn Oil & Gas Co. are starting a wildcat in eastern Clark County, on a block of nearly 25,000 acres. It is No. 1 Morrison, C SE SW section 17-32-21w. It is northwest of gas production in that area. Ryan Consolidated Oil Corp. No. 1 Norton, NE corner section 32-14-2w, wildcat 3 miles southeast of Salina in Saline County, was moving in material. Phillips Petroleum Co. No. 1 Kaufman, NE NW section 2-22-2w, wildcat 3 miles southwest of production in the Graber field and in Harvey County, was building derrick. Pryor & Lockhart and others No. 1 Kerr, C NW section 22-23-8w, wildcat 5 miles north of production in the Abbyville pool of Reno County, had rig up.

Operations in the active areas of Reno, Rice and Russell Counties, now the busiest counties in Kansas, were largely at routine stage; but Ellis County, rapidly forging to the fore as one of the major oil counties, continued to provide interesting news. More completions in the Ruder area are making that sector in southern Ellis County look like a prospective major field. Tom Palmer of Wichita and the Stormking Oil Co. (Ben Curtis and Glen Dial of Tulsa) are developing a 2,800-acre block in the Ruder area. Their No. 1 Madden, NW NW SW section 9-15-17w, and the No. 5 Carl Ruder, NE NE NW section 17-15-17w, were brought in during the week for better than 1,000 bbls. of oil each. Several other tests are nearing completion in the area, which recently was given a boost when the Kaw Pipe Line Co. laid a line to the field and began taking oil. Bridgeport Machine Co. and others No. 1 Madden, NE NW NW section 26-15-18w, apparently has opened a new pool southeast of Ruder. It had 1,200 feet of oil in the hole at total depth of 3,340 feet. Just south of the Ellis County line in Rush County, National Refining Co. No. 1 Werth, NW NE NE section 7-16-18w, wildcat pool opener, had water in the hole after deepening to 3,625 feet in Conglomerate. Before deepening into Conglomerate it had flowed 444 bbls. of oil in 24 hours.



Map of the Rush County, Kansas, area where National Refining Co. opened a new oil pool with No. 1 Werth, wildcat in NW NE NE section 7-16-18w

(Mid-Continent Map Co., Wichita, Kans.)

Rice County

Shell Petroleum Corp. No. 5 McFarland, NW NE NW section 7-20-9w, in the Silica area of Rice County, made potential of 1,160 bbls. of oil, with 35 bbls. of water, and was completed at 3,278 feet, total depth. Top of Siliceous lime was 3,261 feet. Rose-Spring Drilling Co. and others No. 1 Young, SW SW SE section 8-20-9w, topped Siliceous lime at 3,272 feet; total depth, 3,291 feet. It pumped 300 bbls. in 17 hours and made potential of 435 bbls., down six and one-half hours. C. B. Davis and others No. 9 Dueser, SE SW SW section 31-19-10w, made potential of 768 bbls. and was completed at 3,298 feet, total depth. Siliceous lime was topped at 3,274 feet.

Gulf Oil Corp. No. 6 Hartle, SE NE NW section 15-20-9w, in the Chase pool, topped Siliceous lime at 3,215 feet and was completed at 3,241 feet, total depth. It made potential of 506 bbls. of oil, with 10 bbls. of water. Empire Oil & Refining Co. No. 3 Burns, SW cor. section 15-20-10w, had Siliceous lime at 3,375-80 feet, total depth. It was acidized and made potential of 658 bbls. of oil; acidized a second time, it made potential of 996 bbls., completed. Shell Petroleum Corp. and others No. 1 Sherman "B," SW SW NE section 16-19-9w, made potential of 1,301 bbls. of oil, with 20 bbls. of water and was completed at 3,226 feet, total depth. Top of Siliceous lime was 3,193 feet.

Slick, Pryor & Lockhart and others No. 3 Moran "A," SE SW NW section 4-18-10w, encountered Siliceous lime at 3,235 feet and was completed at 3,263 feet, total depth. It made potential of 1,053 bbls. of oil. Same operators' No. 1 Habiger, SE NE NE section 5-18-10w, had top of Siliceous lime at 3,250 feet; total depth, 3,273 feet, and pumped 268 bbls. in 24 hours. It was acidized and made potential of 1,121 bbls. of oil. Continental Oil Co. and others No. 2 S. Ainsworth, NW NW NE section 25-18-8w, topped Siliceous lime at 3,130 feet; total depth, 3,169 feet. It pumped 1,190 bbls. of oil in 15½ hours and made potential of 1,345 bbls., completed. Douglas Oil & Gas Co. No. 1 Hauschild, NE NE NW section 15-21-7w, old well deepened from 3,372 feet to 3,393 feet, flowed 1,054 bbls. in six hours, made potential of 3,997 bbls. and was recompleted.

New work in Rice County: J. H. Tatlock and others No. 5 Berscheit, NE NW NW section 6-20-10w, building rig; same operators' No. 6 Berscheit, NW NE NW section 6-20-10w, moving in material; same operators' No. 7 Berscheit, SE NW NW section 6-20-10w, moving in material; E. J. Shaffer and others No. 2 Hauschild, NE NW NE section 15-21-7w, rotary rig.

Estimated Production

Estimated daily average production in Kansas for the week ending June 20 and for the preceding week is as follows:

	Barrels	
	June 20	June 13
Oxford City	6,100	5,200
Burrton	11,675	11,625
Ritz-Canton	6,150	6,235
Hollow-Nikkel	3,800	3,900
Voshell	2,800	2,850
Ellsworth County:		
Lorraine-So. Lorraine	6,626	7,399
Other pools	1,531	1,985
Rice-Barton Counties:		
Chase	9,444	9,559
Raymond	3,912	4,964
Silica	11,383	11,439
Keesling	1,719	2,867
Miscellaneous Rice	5,346	4,680
Miscellaneous Barton	2,887	3,178
Russell County:		
Fairport	2,417	2,572
Gorham	3,470	3,728
Russell	2,571	2,612
Sullivan	3,104	2,147
Other pools	7,169	7,515
Sedgwick County:		
Valley Center	1,303	1,319
Greenwich	1,271	1,302
Robbins	1,477	1,506
Eastborough	811	819
Other pools	386	482
Ellis County	1,456	1,143
Kingman County	539	523
Stafford County	1,778	1,717
Greenwood County	10,000	10,100
Butler County	18,010	17,980
Reno County	13,279	13,276
Other fields	20,140	20,989
Total Kansas	149,175	152,325

Barton County

Continental Oil Co. No. 12 Risse, SW NW SE section 36-19-11w, in the Silica area of Barton County, was acidized with 4,000 gallons and made potential of 1,842 bbls. of oil. It was completed at 3,292 feet, total depth. Top of Siliceous lime was 3,278 feet. Same operator's No. 13 Risse, NW NW SE section 36-19-11w, topped Siliceous lime at 3,272 feet; total depth, 3,292 feet. After acid treatment, it made potential of 1,720 bbls. of oil. Sinclair Prairie Oil Co. No. 2 Isern, NE SE SW section 25-19-11w, topped Siliceous lime at 3,292 feet; drilled to 3,326 feet, water appeared, and it was plugged back to 3,317 feet to

complete. After acidizing with 1,000 gallons, then 3,000 gallons and finally with 5,000 gallons, it made potential of 256 bbls. of oil.

One new test was started in Barton County. Sinclair Prairie Oil Co. No. 1 A. Isern, SE NE SW section 25-19-11w, was a cellar.

Magnolia Petroleum Co. No. 6 Meda Steckel, NE SE NW section 1-20-11w, topped Siliceous lime at 3,287 feet; total depth, 3,305 feet. It was acidized and made potential of 150 bbls. of oil.

Ellis County

In the Bemis pool of Ellis County, Margay Oil Co. No. 2 Bemis "A," NE SE SE section 16-11-17w, made potential of 1,347 bbls. in 24 hours and was completed at 3,375 feet, total depth. Anhydrite was topped at 1,060 feet; Topeka, 2,785 feet; Siliceous lime, 3,360 feet. In the Ruder area in the southern part of the county, Tom Palmer and Storm King Oil Co. No. 1 Madden, NW NW SW section 9-15-18w, topped Siliceous lime at 3,546 feet and was completed at 3,572 feet, total depth. It swabbed 150 bbls. of oil in four hours; was acidized and made 24-hour potential of 1,011 bbls.

The following new work was started in Ellis County: Tom Palmer & Storm Oil Co. No. 6 Ruder, NE NW NE section 17-15-18w, building rotary rig; same operators' No. 3 Ruder, SW NW NE section 17-15-18w, an old well, cleaning out at 3,291 feet; same operators' No. 2 Ruder, NW NW NE section 17-15-18w, an old well being deepened, drilling at 3,760 feet.

Twin Drilling Co. No. 2 Goetz, NE SW SE section 3-14-17w, topped Siliceous lime at 3,512 feet and was bottomed at 3,560 feet. It was acidized and pumped 165 bbls. of oil in 13 hours.

Reno County

McPherson Drilling Co. and Derby Oil Co. No. 4 Scheuchzer, NW SE SW section 17-24-4w, in the Burrton area of Reno County, made potential of 1,515 bbls. after acidizing with 2,000 gallons and was completed at 3,381 feet, total depth. Chat, the producing formation, was topped at 3,307 feet. Shell Petroleum Corp. No. 2 Welch "A," SW cor. section 9-24-4w, was acidized with 2,000 gallons and pumped and flowed 1,522 bbls. of oil and 22 bbls. of water. It previously had pumped 508 bbls. of oil and 20 bbls. of water in 21 hours. Production was from Chat, topped at 3,286 feet; total depth, 3,404 feet, completed. Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Welch, C SE NW section 9-24-4w, was completed at 3,372 feet, total depth. Chat was topped at 3,293 feet. It pumped and flowed 120 bbls. of oil in 22 hours, and after acid treatment, made potential of 267 bbls.

New work starting in Reno County was as follows: Pryor & Lockhart and others No. 1 Kerr, C NW section 23-23-8w, wildcat north of the Abbyville area, was a rig; Shell Petroleum Corp. No. 2 S. Collins, SW NW SW section 16-24-4w, rotary rig; Empire Oil & Refining Co. No. 1 Scheuchzer, NE NE NW section 20-24-4w, location; same operator's No. 2 Scheuchzer, SE NE NW section 20-24-4w, location.

Russell County

Darby Petroleum Corp. and Continental Oil Co. No. 1 Letsch, SE NE NW section 34-14-13w, wildcat, opened a new producing area east of the Hall pool in Russell County. Top of Topeka was 2,525 feet; Kansas City, 2,831 feet; Granite Wash, 3,238 feet; Granite, 3,262-65 feet, total depth. It was plugged back to 2,880 feet, acidized and made potential of 419 bbls. of oil, producing from Kansas City lime.

Empire Oil & Refining Co. No. 4 Crawford, SE SW SW section 2-14-15w, had Gorham sand at 3,298 to 3,300 feet, total depth; made potential of 757 bbls. of oil and was completed. Hartman & Blair No. 2 Sullivan, SE NE SE section 2-14-15w, topped Oswald lime at 3,062 feet; total depth, 3,090 feet. It pumped 213 bbls. of oil in 24 hours; was acidized, and made potential of 477 bbls. of oil, with 22 per cent water, completed. Darby Petroleum Corp. No. 3 Dumler, SW NW NW section 11-14-15w, had Gorham sand at 3,279-87 feet, total depth. It pumped 365 bbls. of oil and 149 bbls. of water in nine hours, and made potential of 624 bbls. of oil, with an estimated 400 bbls. of water. Empire Oil & Refining Co. No. 1 Miller, SW SE SE section 31-14-13w, SW SE SE section 31-14-13w, was dry and abandoned in Gorham sand at 3,146-47 feet, total depth. Gulf Oil Corp. No. 1 Ehrlich, SW SW NW section 1-14-15w, an old well, was deepened from 3,066 feet to 3,099 feet, and plugged back to 3,078 feet. It made potential of 1,059 bbls. of oil, with 33 bbls. of water, completed.

The following new work was started in Russell County: Bridgeport Machine Co. No. 3 Polcyn, SE NW NE section 10-14-15w, ponds; Stanolind Oil & Gas Co. No. 2 Gideon, SW NE NW section 8-15-14w, cellar; Coralena Oil Co. No. 3 Trapp, SW SE SE section 30-15-13w, moving in material.

Empire Oil & Refining Co. No. 1 Mai "B," SE SE SW section 28-13-14w, topped Oswald lime at 3,022 feet; La Motte sand, 3,299 feet; total depth, 3,323 feet, and pumped 93 bbls. of oil in 48 hours. Gulf Oil Corp. No. 4 Ehrlich, SW NW NW section 1-14-15w, topped Gorham sand at 3,304 feet; had an increase in oil at 3,310-16 feet; swabbed 265 bbls. of oil in 10 hours, and made potential of 306 bbls. in 22 hours, cutting 5 per cent water. Texas Co. No. 4 Anschutz, NW NE SW section 1-14-15w, total depth, 3,122 feet; was acidized with 2,000 gallons and made potential of 860 bbls. of oil in 24 hours. Empire Oil & Refining Co. No. 6 Johnson, NW SE NE section 2-14-15w, topped Tarkio formation at 2,525 feet; and pumped 305 bbls. of oil in 12 hours, cutting 1½ per cent water.

Ellsworth County

Empire Oil & Refining Co. and others No. 1 Janssen "B," SE SE SW section 34-17-8w, in the Geneseo area of Ellsworth County, topped Siliceous lime at 3,216 feet and was completed at 3,258 feet, total depth. It made potential of 335 bbls. of oil. After acid treatment, it made potential of 806 bbls. It was acidized a third time and again made potential of 806 bbls., down two hours in 24 hours.

McPherson County

Continental Oil Co. and others No. 3 A. K. Graber, NW NW SE section 29-21-1w, in the Graber area of southeastern McPherson County, was completed at 3,317 feet, total depth. Chat was topped at 2,920 feet; Hunton lime, the producing formation, was topped at 3,278 feet. It swabbed 122 bbls. of oil in 24 hours. After acid treatment with 4,000 gallons, it made potential of 464 bbls.

New work in McPherson County: Roth & Faurot No. 1 Logback, SW SE NE section 12-19-3w, building rig: Continental Oil Co. and others No. 3 Hatzke, NE NW NE section 29-21-1w, rotary rig.

Harvey County

Phillips Petroleum Co. was building rotary rig for No. 1 Kaufman, NE NE NW section 2-22-2w, wildcat west of the Showalter area in northern Harvey County.

Sumner County

Carlock, Rosenthal and others No. 3 Wenrich, NW NW SW section 23-32-2e, in the Oxford area of Sumner County, topped Dolomite at 2,908 feet and was completed at 2,975 feet, total depth. It was acidized with 3,000 gallons and 6,000 gallons and made potential of 1,014 bbls. of oil.

Slick and others No. 1 Murphy, NE SE SE section 32-31-1w, in the Wellington pool, topped Chat at 3,660 feet and was completed at 3,686 feet. It was acidized with 2,000 gallons and made potential of 708 bbls. of oil. Orcutt & Stewart No. 1 Newton, SE cor. section 21-30-2e, wildcat, was abandoned at 550 feet, total depth.

Shell Petroleum Corp. No. 14 Emrich, an old well, was deepened from 2,071 feet to Dolomite at 2,825 feet; total depth, 2,852 feet. Water intruded and it was plugged back to 2,844 feet and swabbed 31 bbls. of oil and 42 bbls. of water in 15 hours. It made potential of 210 bbls. of oil, with 140 bbls. of water.

Two new tests were started in Sumner County. Slick and others No. 2 Murphy, SE NE SE section 32-31-1w, was a location. Olson Drilling Co. and Shell Petroleum Corp. No. 2-A Community, NW NE NE NE section 14-32-2e, was a rotary rig.

Cowley County

Four wells, including two wildcats, were dry and abandoned in Cowley County. Wakefield and others No. 1 Daniels, SE SW SE section 3-30-3, wildcat, had Siliceous lime at 3,123-66 feet, total depth, and produced 10 bbls. of water per hour. Benedum & Trees No. 1 Carson, SW SW NW section 8-20-4, wildcat, topped lime at 2,885 feet, and had a hole full of water at 3,265-75 feet, total depth.

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Trees Oil Co. No. 1 Harris, SE NE SW section 19-30-4, was abandoned at 2,892 feet, total depth. Tom Palmer No. 2 David, SE SE SW section 35-30-4, topped Mississippi lime at 2,992 feet and had a hole full of water at 3,185-90 feet, total depth.

One new test was reported in Cowley County. Black Gold Oil Co. No. 1 Smallfield, NW NW SW section 8-35-3, was building rotary rig.

Woodson County

C. L. Sheedy and others No. 2 J. W. Tipton, NE NW NW section 28-25-14, in Woodson County, had sand at 1,370-1,454 feet, total depth, and production was estimated at 600 bbls. of oil, completed. Pure Oil Co. No. 17 Winterscheid, NE SE NE SW section 6-24-14, topped lime at 1,675 feet, with pay at 1,692-1,717 feet, total depth. It was acidized with 2,000 gallons and pumped 113 bbls. of oil in 18 hours. C. L. Sheedy and others No. 1 Abbott, NE NE SE section 16-25-14, wildcat, encountered water in Mississippi lime at 1,538-55 feet, total depth, and was dry and abandoned. Lester and others No. 1 Weidle, NE NE SE section 17-25-14, wildcat, had a hole full of water at 1,565 feet, total depth, and was dry and abandoned.

New work in Woodson County: McClintock & Smith No. 1 Vostarz, SE SW NE section 23-23-14, spudding; Pure Oil Co. No. 18 Winterscheid, SE NE SW section 6-24-14, drilling at 160 feet; Gillespie & Son No. 1 Naylor, SW SW NW section 25-25-14, drilling at 515 feet.

Greenwood County

Shull Drilling Co. No. 1-A Bowles, SW SW NW section 15-24-13, was the only Greenwood County completion. It had Mississippi lime at 1,650 to 1,710 feet, total depth, and was dry and abandoned.

The only new test in Greenwood County was Colter & Davidson No. 4 Proctor, NE SW SE section 16-26-13, location.

Butler County

Armer & Brandt and others No. 1 Romp, SW SW NE section 15-28-7, was the largest of three producers completed in Butler County. It topped lime at 2,692 feet; total depth, 2,707 feet. It was acidized and pumped 195 bbls. of oil in 24 hours. Vickers Petroleum Co. No. 3 McCraner "A," SW SE SE section 35-24-3, pumped 189 bbls. of oil in 18 hours after acid treatment and made potential of 169 bbls. Top of lime was 2,716 feet; total depth, 2,727 feet. Western Kansas Oil & Refining Co. No. 2-A Furman, NE SW SW section 8-23-4, had pay at 2,070-75 feet; total depth, 2,690 feet. It was acidized with 3,000 gallons, pumped 142 bbls. in 24 hours and made potential of 102 bbls. on two-day average.

Work had started at one new Butler County test. Flint Hills Oil & Gas Co. No. 9 Martin, NE SE NE section 27-28-4, was drilling at 125 feet.

Sedgwick County

Gulf Oil Corp. No. 1 Hemant, SW SW NE section 14-26-2, an old Sedgwick County well drilled deeper, topped Wilcox sand at 3,270 feet and had Siliceous lime at 3,301-07 feet, total depth. It made potential of 116 bbls. of oil in 24 hours and was recompleted.

Finney County

A new gas area was opened in Finney County at Lone Star State Drilling Co. No. 1 Hamlin, SW SW NE section 31-24-34w, wildcat north of the Holcomb gas pool. It was completed at 2,700 feet, total depth, and produced 750,000 feet of gas.

Stevens Field

United Production Co. No. 2 Christopher, C NW section 13-33-39w, in the Hugoton field of Stevens County, produced 10,500,000 feet of gas and was completed at 2,652 feet, total depth.

Texas Interstate No. 1-12 Snyder, NW NW SE section 12-35-39w, the only new test reported in Stevens County, was a location.

Morton County

Texas Interstate No. 1-6 Greening, SE NE SW section 6-35-39w, on the Morton County side of the Hugoton gas field, was a location for a new test.

Meade County

Pacific Midwest Oil Co. No. 1 Rexford, NE SE SW section 8-30-29w, wildcat in northwest Meade County, was moving in material.

Clark County

Olson & Watchorn No. 1 Morrison, C SE SW section 17-32-21w, wildcat in the Morrison area of Clark County, was moving in material.

Saline County

Ryan Consolidate Co. and Archer No. 1 Norton, NE cor. section 32-14-2w, wildcat southeast of Salina in Saline County, was moving in machine.

Old Shamburg Field

OIL CITY, Pa., June 22.—The heart of the old Shamburg field has been purchased by Walter S. Borland, of Oil City; Homer H. James, former Oil Well Supply Co. executive, and Claude Slicker, oil and gas operator of Knox, from Dr. S. N. Burchfield, of Titusville. The transaction conveying ownership of the 300-acre tract was handled through the Titusville Trust Co.

This property reached a peak production of 190,000 bbls. in 1869. It was here the Shamburg discovery well was drilled. After reaching the abandonment stage and experiencing neglect for several years, the property was placed in the hands of C. C. Hogg, secondary recovery expert, a year ago for rehabilitation through repressuring. The lease, including the Foskey, Tallman, St. Clair, Jordan and Boyd Poor farms, was under vacuum when the secondary recovery development was initiated. The natural gasoline compression plant which had been operated for a dozen years, was converted into a repressuring plant.

Vacuum on the property has now been eliminated and five pressure wells are taking 200,000 feet of air and gas mixture every 24 hours. The converted gasoline plant equipment being used are a single stage 6x8 compressor handling gas, and a Worthington 4x8x10 compressor handling air. Gas is injected in the low pressure, 60 pounds, parts of the pay sand, and air is introduced in the high pressure sections, up to 280 pounds.

Production, which had practically reached the zero mark, has moved up to 25 bbls. a day at present after the extended and delicate work of eliminating vacuum, an operation which often shuts off production entirely for considerable periods.

Four additional air and gas intake wells have been cored in widely separated parts of the property during recent weeks. These reveal a Third sand, thickness ranging from 45 feet to 50 feet, and excellent saturation. It is understood that plans for a completely modern repressuring plant with a capacity of 1,000,000 feet of air and gas a day are nearing completion. Location of the 70 producing wells on the property will enable the operators to carry out a scientific development pattern without difficulty.

California Operators

LOS ANGELES, Calif., June 22.—Only minor operator groups have so far certified their choice of officers for the coming year, as follows:

San Joaquin Valley: Coalinga district—W. S. Fisher, chairman, W. M. & M. Oil Co.; F. A. Wells, vice chairman, Inca Oil Co.; H. J. Goldbaum, secretary, Amity Oil Co. Mountain View-Edison—Dana Hogan, chairman, Hogan Petroleum Co.; Ross McCollum, National Oil Co., vice chairman. Ventura County—R. N. McMaster, chairman, C. C. M. O. Co.; S. P. Mullen, vice chairman, Merchants Petroleum Co.; Bettye Bohanon, secretary, secretary Central Committee.

Los Angeles Basin: Dominguez—J. U. Stair, chairman, Shell Oil Co.; Joseph Jensen, vice chairman, Associated Oil Co. Los Angeles-Inglewood-Potrero—Joseph Jensen, chairman, Associated Oil Co.; P. C. McConnell, vice chairman, Standard Oil Co. Seal Beach-Alamitos Heights—A. H. Bell, chairman, Continental Oil Co.; Warren Craddock, vice chairman, Pacific Western Oil Co. Torrance - Hermosa - Rosecrans - Athens-Lawndale—J. A. Bermingham, chairman, Texas Co.; W. C. Whaley, vice chairman, Barnsdall Oil Co.; E. R. Burns, secretary, MacDonald & Burns. Montebello-East Coyote-Whittier district—Warner Clark, chairman, Standard Oil Co.; F. M. Ziegler, vice chairman, St. Helens Petroleum Co., Ltd. Brea Olinda-Richfield-East Coyote district—Lawrence Vander Leck, chairman, Fullerton Oil Co.; V. H. Wilhelm, vice chairman, Texas Co.; P. C. McConnell, secretary, Standard Oil Co.

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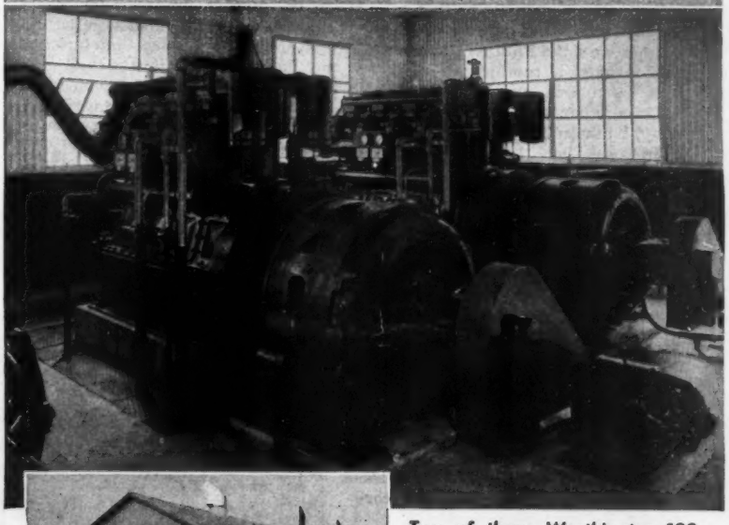

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North Louisiana, Arkansas

RODESSA PRODUCTION UP IN WEEK OF FEW COMPLETIONS

By MITCHELL TUCKER

SHREVEPORT, La., June 22.—Attention is again being centered upon the deep tests drilling to further explore the Permian zone on the northeastern flank of the old Smackover field, Ouachita County, Arkansas, which are rapidly nearing the point of testing and completion.

Standard Oil of Louisiana No. 3-B Reynolds, two locations southwest of the Phillips-Reynolds discovery well, encountered saturated porous lime from 4,892 to 4,912 feet, and casing was set at 4,898 feet. Official production test of this well is expected soon.

John Pugh No. 1-A Hildebrand, two locations farther to the southwest, topped the saturated lime at 4,911 feet, and is now coring ahead and testing.

The Lion Oil Refining Co. No. 1 Reynolds, one-half mile due west of the discovery well, is drilling ahead at 4,704 feet. One quarter of a mile farther west the Phillips Harriss well has reached a total depth of 4,869 feet, where drill stem is now stuck.

Three other wells are now drilling several hundred feet above the Permian zone, but their completion is expected within the next week or 10 days.

Gas production from the gas distillate discovery well, described as Phillips-Reynolds No. 1 in the SE NW section 27-15-15, is being used to supply 18 drilling boilers nearby, which require about 5,000,000 feet per day. At this rate of flow, the well is producing 84 bbls. of dark colored 64-gravity distillate, with a tubing pressure of 250 pounds and casing pressure of 1,765 pounds.

This productive zone, heretofore spoken of as the "Permian," has been named by some geologists as the **"Reynolds lime," and has been correlated** as the upper section of the Permian in this area.

Phillips Petroleum Co. is now building derrick for another well to the same horizon, to be known as No. 1 J. M. Farriss, C W half NW SE section 27-15-15.

J. M. Farriss has taken over the operation of Belmont and others No. 1 Dean, section 16-15-17, abandoned in 1930 at 2,907 feet. It is planned to continue drilling of this well for a test of the Permian beds.

Arkansas-Louisiana Gas Co. has begun construction of a 6-inch line to connect its main line with the Phillips No. 1.

The Rodessa Field

Rodessa's production on both sides of the state line increased in the past week by 1,275 bbls. per day in a week of few completions.

The Louisiana side of the Rodessa pool yielded seven new producers, bringing the total up to 206. No completions were recorded on the Cass County, Texas, side, leaving the total Texas producers at 18. Three new locations were staked on the Louisiana side, and one in Texas.

This pool was assured of an extension test three-fourths of a mile northeast when Red Iron Drilling Co. staked location for No. 1 Means in SW of NE section 9-23-15.

Pipe Line Purchase

A major source of contention in this field was partially cleared away this week when final papers were filed covering the sale of the East Texas Pipe Line Co.'s 8-inch line from Rodessa, La., to Longview, Tex., to the United Gas Public Service Co., for an unannounced consideration. This line has been the subject of much discussion as it connected to the Pelican Oil & Gasoline Co.'s Sexton lease and afforded the outlet for much of the excess oil produced recently under the "special order" granted by the Louisiana Conservation Commission. Immediately following the sale of this line to the United, the Pelican's wells were connected to the Shoreline company's short line to its refinery at Lewis, La., several miles south of Rodessa.

Rumors have been prevalent for some time regarding the sale of the Sexton lease by Pelican Oil & Gasoline Co. The Shoreline company is now mentioned as a negotiator for the property. It is definitely understood that the negotiations for this 120-acre lease by several of the major Rodessa operators did not materialize due to difficulties in arriving at an agreeable price. In as much as the oil trunk line outlet from Rodessa is now in strong hands, companies that are sufficiently well protected in the area do not seem interested in the purchase of the Pelican property. The field is now being served by the Arkansas Pipe Line Corp.'s 6-inch line to Shreveport, the United's recently acquired 8-inch line to Longview, Gulf's 6-inch line to Port Arthur, Magnolia's 8-inch line to Beaumont, and Standard's 8-inch line to Baton Rouge.

Bi-State Complications

Although differences between Louisiana and Texas conservation officials in the manner of prorating this bi-state field have been temporarily eased, it is inevitable that this subject will again become a major source of issue. There are now 18 producing wells in the Cass County portion of the field, with 12 wells in the process of drilling, to say nothing of the several thousand proven but undeveloped acres between the state line and the foremost extension to the west. As the number of producing wells continue to increase (with their generous daily allowable) on the one hand, and the persistent efforts of the Texas Railway Commission to reduce the allocation to other pools within that state on the other, attention can only logically be centered upon a readjustment of allowables at Rodessa. The other side of the picture is that Texas officials cannot cut allowables below that granted Louisiana wells without depriving Texas leaseholders of their just property rights in the reservoir energy and oil. Even should they attempt such a thing, it is doubtful whether the order would be upheld. The remaining and logical solution lies in complete cooperation between the two states.

Proration engineers for the Texas commission are continuing to gather information relative to gas-oil ratios, gas wastage, efficient flowing rates, etc., which it is believed will eventually be used in an effort to place Rodessa field upon not only an equitable but a scientific proration basis. Thus far the Louisiana commission has made no efforts in this direction; in fact, it has never had any agents assigned to the area to study actual field conditions.

Dense Spacing Threatened

Indications that Rodessa will suffer dense spacing in areas other than the Townsite proper were made evident this week. The Caddo Parish school board approaved a 2-acre lease covering property in section 8-23-15 on June 17, which carried a provision that this tract be immediately drilled upon the completion of an east offset.

A 20-acre spacing pattern has been attempted for this pool, but an official of a major operator recently announced intention of starting an intensive drilling campaign soon within the proven limits of the pool on a 10-acre spacing plan. Permits for the drilling of wells on the Texas side have been granted with no regard for the spacing pattern involved.

Rodessa Completions

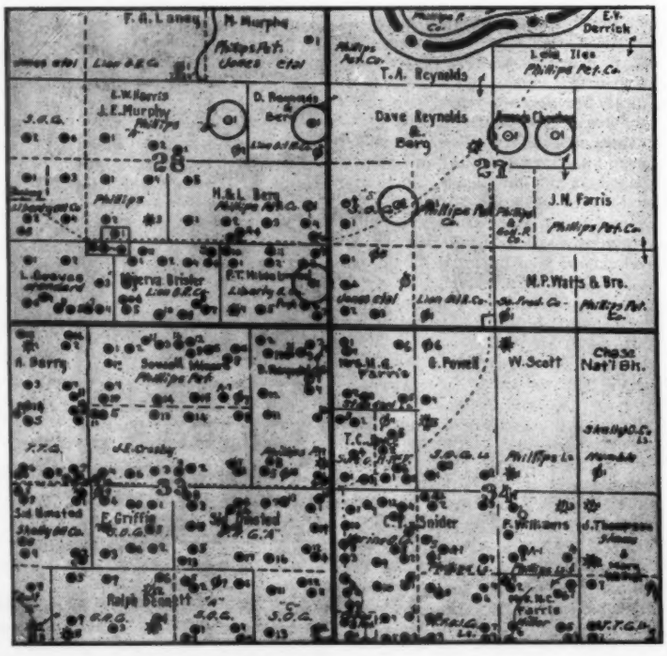
Details of Rodessa completions for the week follow:

M. H. Marr and others No. 2 Peak, section 11-23-16, 23 bbls. per hour through one-half inch choke on tubing. Saturation topped at 6,029 feet, and well completed at 6,049 feet.

Phillips Petroleum Co. No. 2 Adams, section 17-23-15, saturation from 6,006 to 6,039 feet, total depth, elevation 258 feet, flowed 93 bbls. in 14 hours through 13/64-inch tubing choke: tubing pressure 175 pounds, casing pressure 450 pounds.

United Gas No. 1 McCoy, section 16-23-16, 15 bbls. per hour through three-quarter inch tubing choke; saturation 5,983-5,989 feet, acidized with 2,000 gallons. Tubing pressure 500 pounds; casing pressure 1,050 pounds.

United Gas No. 7 M. L. Pitts, section 13-23-16, acidized with 1,500 gal-



Permian area in Township 15-15, the northeastern end of the old Smackover, Arkansas, field, which is attracting much interest among Louisiana-Arkansas operators

(Globe Mapping Co., Shreveport, La.)

lons at a total depth of 6,095 feet; saturation 6,035 to 6,055 feet. Initial flowing gauge 16 bbls. per hour through one-quarter inch tubing choke.

United Gas No. 22 Rodessa Oil & Land Co., section 15-23-16, flowed 12 bbls. per hour through one-half inch tubing choke; saturation at 5,905-5,912 feet, and 5,979-5,981 feet. Total depth 5,987 feet, elevation 206 feet.

United Gas No. 3 N. S. Spearman, section 18-23-15, flowed 16 bbls. per hour through one-quarter inch tubing choke; saturated zone 5,990-6,037 feet. Tubing pressure 525 pounds, casing pressure 325 pounds.

United Gas No. 10 Tyson Unit, section 11-23-16, topped saturated pay at 6,029 feet and flowed 13 bbls. per hour on initial test. Total depth 6,030 feet, elevation 252 feet.

Can't Make Allowable

The American Liberty Oil Co.'s Rambo producer in Cass County, the southwest extension well, has been incapable of producing its allowable for some time, and has lately been averaging about 70 bbls. per day. In an effort to increase the oil production, the saturated section from 5,993 to 6,000 feet was treated on June 18 with 3,000 gallons of acid. Reports now available indicate that the pressures and gas volume were materially increased, with no change in oil production.

Bossier Parish

George H. Bringhurst and others No. 1 Buckley, section 36-21-13, Bossier Parish, encountered salt water in sand at 2,309 feet, and was abandoned. The rig has been moved about 1 mile east for another test to the same horizon.

Five major companies have seismograph crews in Bossier Parish, working in Townships 17, 18 and 22, Ranges 11, 12 and 13.

Bienville Parish

Although no deep formations have been found productive in Bienville Parish, it continues to attract its share of leasing and exploration work. Eight major companies have been actively buying during the last few weeks. Standard Oil of Louisiana has assembled a 10,000-acre block near Gibsland. They also did extensive seismograph work in Township 17, Range 7, and took a sizeable number of leases following the geophysical work.

About three years ago Arkansas-Louisiana Gas Co. assembled what was known as the Bryceland block, comprising 6,000 acres, around section 6-17-6, and has been gradually adding to its holdings there. It is reported that a deep test is planned for this block in the near future.

Caddo Parish

The deep test formerly described as Pyramid Oil & Gas Co. No. 1-A S. R. Wheeler, in section 16-18-16, Caddo Parish, again found salt water after plugging back for the third time from its total depth of 5,200 feet. The United Gas Public Service Co. announced it had acquired full working interest in this well and the surrounding block by the purchase of Belchic and Laskey's one-half interest. Terms of the transaction were not disclosed. Drilling will be resumed by the United within the next few days, and it is planned to carry the test to the lower Trinity sand, expected at approximately 6,000 feet.

Morris & McCain No. 1 Hughes, section 16-20-15, shut down at 2,207 feet for several months, was drilled to 2,257 feet, where salt water was encountered, and the well has been abandoned.

On a recently assembled block of acreage near Caspiana, J. E. Smitherman of Shreveport and associates, under the name of Prairie River Syndicate, staked location for No. 1 Hutchinson, C SW SW NW section 15-15-12. It is planned to test the three sections of the Trinity, if commercial production is not encountered above.

Simplex Oil & Gas Co. No. 10 Glasswell, section 10-20-15, was a routine completion on the southern edge of the Caddo pool for an initial pumping gauge of 50 bbls. per day.

Claiborne Parish

United Gas Co.'s closely watched test, No. 2 Darrett in section 31-20-5, is now fishing for 450 feet of drill pipe at a total depth of 7,663 feet. Operators do not expect any change in the status of this well for the next several hundred feet, as they plan to test Permian beds.

The Standard Oil Co. of Louisiana recently leased a 7,500-acre block around section 10-21-8, following an extensive seismic survey here. The crew is continuing to work southwest of Athens, after blocking a structure reported to be quite favorable centering in section 15-19-7.

Grant Parish

Taw Oil Co. No. 1 Bradford, section 16-9-1e, Grant Parish, has been abandoned as a dry hole at a depth of 1,558 feet.

Fred W. Henslee No. 2 Urania, section 7-10-1e, was completed at a depth of 1,519 feet, pumping 10 bbls. per day.

Lincoln Parish

Lide & Greer's No. 1 Gardner, section 10-7-4, Lincoln Parish, showed an estimated gas volume of 15,000,000 feet on drill stem test at a total depth of 6,469 feet. Twenty-eight feet of heavily saturated gas sand had been cored above this depth. This well is an offset to the Fowler discovery in the Ruston gas area. Coring has now been resumed. The oil rights under this block have been recently sold to Atlantic Refining Co.

It is expected that Pelican Oil & Gasoline Co. will stake location and prepare for the immediate drilling of a test on its block centering around Dubach in northern Lincoln Parish.

Morehouse Parish

Three routine gas well completions were recorded on the Morehouse Parish side of the Monroe gas field last week, one well testing 5,500,000 feet and two others 4,000,000 feet each. Rock pressures ranged from 970 pounds to 920 pounds.

Geophysical work extending southeast from Snow Hill has caused lease and royalty trading to be quite active in the northern portion of this parish. Six major companies have recently added to their holdings around Bonita, and it is altogether probable that a test of this area will soon be started.

Webster Parish

J. P. Evans and others No. 1 Crichton, gas-distillate discovery well in section 35-18-9, continues to hold the attention of North Louisiana oil men. An average of 100 bbls. of high gravity distillate is being produced daily through one-sixteenth inch choke on 2½-inch tubing, and is being moved to a Shreveport refinery by truck. The gas from the well is being burned at the flares.

Because of the six short-term leases within this immediate area, the Sibley structure will soon be more clearly defined. It is understood that the seismograph indicated a large and attractive anticline here. This well remains, without a doubt, the most impressive discovery in northern Louisiana since Rodessa.

The J. H. Edwards No. 1 Hooper, in section 8-17-9, has been temporarily abandoned at a depth of 3,016 feet for several weeks. W. C. Feazell of Monroe has taken over the block upon which this well is situated, and negotiations are under way for carrying the present well to the Trinity zone found productive in the Evans-Crichton well, about 5 miles to the north.

Cotton Valley Deep Test

The Ohio Oil Co. deep test on the flank of the Cotton Valley pool, No. 1 Holloway, has reached a depth of 8,369 feet. At this point there were indications of having entered a new formation, and preparations were made to core. After pulling a few stands of drill pipe the well started to blow in, and forced some mud over the derrick. Drilling mud is now being conditioned in order to drill ahead in the presence of this gas.

West Carroll Parish

Following the basement barrier farther to the southeast from Snow Hill, Phillips Petroleum Co. has taken extensive geophysical options in the northern section of West Carroll Parish, and plans to conduct an intensive shooting campaign there.

ARKANSAS

Ashley County

The State of Arkansas recently gave to O. G. Murphy of El Dorado a one-year lease on all beds, bars, lakes and bays of the Ouachita and Sabine Rivers, and the rivers themselves, wherever they touched sections 12, 13, 19, 22, 23, 24, 26, 27, 28, 30, 31, 32 and 34, Townships 17, Range 10, and sections 4, 5, 6, 7, 8 and 18, Township 17, Range 9.

Columbia County

John F. Magale, holder of a 10,000-acre block centering about section 18-19-18, is reported to be negotiating with the East Texas Petroleum Co. for a 6,000-foot test.

Six seismograph crews, sponsored by major companies, have been or are still checking structures within this county. Most of the work has been in Townships 15 and 17, Ranges 20 and 21.

Hempstead County

It is understood that negotiations are under way to make a deep test of M. D. Fitzwater No. 2 Lafferty, section 17-14-24, which has been standing for orders at a depth of 2,415 feet for some time.

Easton and others No. 1 Conway, section 17-14-24, took drill stem test in the lower Trinity sand at 2,612-23 feet. Fresh water with some showing of dead oil was evidenced by the test. The well is now coring and drilling ahead.

LaFayette County

Ohio Oil Co. (Erwin & Leach) No. 3 Bodcow Lumber Co. is standing for orders at 7,707 feet, after encountering salt water on drill stem test from Oolitic lime (Glen Rose) from 7,626 to 7,698 feet. Schlumberger test was made and porous lime section logged from 7,654 to 7,698 feet, indicating a porosity of 90 millivolts and a resistivity of about 18 ohms. Although this well appears to be a failure in its present horizon, the presence of this 44-foot section of highly porous Trinity lime is quite significant.

Lease holdings continue to change hands at slightly rising prices in this county, as four shooting crews continue their work in the south and southeastern portion.

EAST TEXAS BORDER
Harrison County

W. F. Bridewell No. 1 Platt, in the F. C. Baker Survey, originally thought to be a 60- to 100-bbl. well, proved disappointing this week when it was only rated as good for 5 bbls. per day on the pump by the most optimistic observers, after swabbing dry. The present chalky lime formation may be mudded off and drilling operations continued to the originally planned depth of 5,500 feet, where operators are to receive considerable "bottom hole" money in case of a dry hole.

Production by Pool

Estimated daily gross production of all companies for the week ending June 19, 1936:

NORTH LOUISIANA

	Bbls.
Bellevue	600
Caddo light	4,290
Caddo heavy	2,380
Converse	1,015
Cotton Valley	355
DeSoto and Red River	1,450
Elm Grove	445
Haynesville	3,075
Holly	140
Homer	3,540
Pleasant Hill	160
Rodessa	54,700
Sarepta-Carterville	500
Urania	2,710
Zwolle	1,065
Total	75,425

SOUTH ARKANSAS

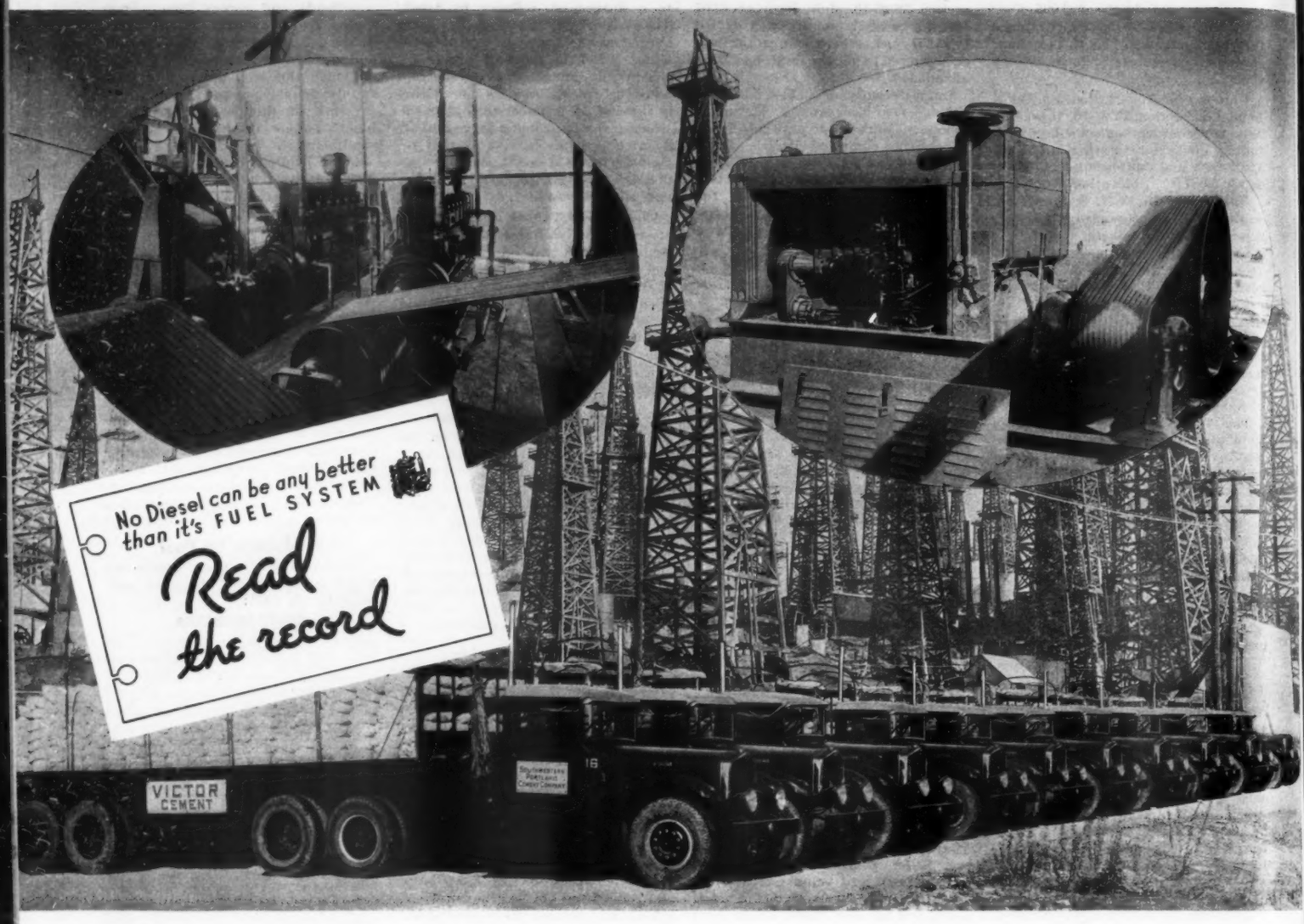
Champagnolle	2,900
El Dorado	2,135
Lisbon	200
Miller County	1,015
Nevada	880
Smackover light	2,190
Smackover heavy	17,750
Stephens	580
Urbana	1,825
Total	29,565

Texas side of Rodessa field, 5,150 bbls. daily.

California Fields

(Continued from Page 92)

2 Blackburn of the A. T. Jergins Trust, brought in pumping 212 bbls. of 28.1 gravity oil per day from 5,241 feet after the hole had been finished with an 8⅝-inch water string landed and cemented at 5,075 feet and a 6⅝-inch liner carying 167 feet of 120-mesh screen. It would not flow and was finished on the beam. The Shell Oil Co. recompleted No. 5 Porter lease No. 2, after redrilling and cleaning out the hole and returned it to production, pumping 271 bbls. per day. Two wells were abandoned in the Mountain View field, Barnsdall Oil Co. No. 1 Noble, abandoned at 6,185 feet, and No. 1 Peters of the North American Consolidated, abandoned at 6,430 feet. In the Midway-Sunset field of Kern County, Standard Oil Co. recompleted No. 25 M. J. M. & M., after deepening the hole to 2,860 feet and then plugging back to 2,698 feet. This well was returned to production pumping 98 bbls. of 21.6 gravity oil per day. In the Edison field, the Buffalo Oil Co. completed No. 1 Wildman, pumping 76 bbls. of 16.4 gravity oil per day from 928 feet, after the hole had been plugged back from 1,181 feet.



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East and East Central Texas

By
L. E. BREDBERG

TWO COMPLETIONS AND NINE NEW STARTS MADE IN TALCO

DALLAS, Tex., June 22.—Nine more locations were reported in the Talco pool in northwest Titus and northeast Franklin County in the past week, derricks having been moved in on all but one location and drilling started on one hole. The most interesting location staked in the area this week was by Stroube & Stroube of Corsicana. They have rig up on the S. E. Strutton farm, northwest corner of M.E.P.&P. Survey, 6 miles east of Talco, and 4 miles east of the nearest producer in the field. Two other outpost locations were staked in Franklin County by Stroube & Stroube, on the B. Norman lands in M.E.P.&P. Survey and by L. F. Flannery & Stroube on the Hedrick lands, same survey, where derrick has been erected.

The interesting outpost of Earl Bateman on the Phillips lands, in the William Birdwell Survey, 4 miles southwest of Talco, and about 3 miles southwest of production, logged the Georgetown lime high, topping it at 3,510 feet. Last week it logged the Pecan Gap chalk about 250 feet higher than producers in the field, making it assume more interest to those watching the outpost test which was considered by many to be too far south of the fault to pay off, although the Pecan Gap is not as reliable a marker as the Georgetown lime which is next to the last important marker above the Paluxy, the sand from which production is coming in the Talco field.

The Bateman test is down around 4,100 feet with no information being given out. It is nearing the Paluxy and therefore is an extremely important test, to prove whether or not the field will run that far to the southwest.

Two New Wells

Two wells were brought in, in the Talco pool this week, an east offset to the discovery well, and one to the southeast of the discovery. The Tide Water Oil Co. completed the former well, located on the C. M. Carr lands in the Delgado Survey. It flowed 40 bbls. of oil per hour, from total depth of 4,297 feet, making a much better well than the discovery. Jones & Shelbourne No. 1 Hazelwood, topped the pay at 4,289 feet and is coring at 4,310 feet preparatory to testing and completing. Lucey Petroleum Corp., Byrd and Frost and C. & G. Oil Co. completed their second well on the Crawford lease, in the Orlando James Survey, southwest of Talco. The well made 24 bbls. per hour through a quarter-inch choke, at a total depth of 4,300 feet. It is listed as the best well yet completed in the field. It is located 1,500 feet northwest of the same operators' No. 1 Crawford.

The Humble Pipe Line Co. is surveying and purchasing right of way for a pipe line from the Talco pool in northwest Titus County to its Longview pumping station on its main line from the Van field and East Texas to Shreveport, La., and is also erecting two 55,000-bbl. tanks in the Talco pool. The parent company, Humble Oil & Refining Co. is the largest lease holder and is already a producer in the pool, owning a loading rack at Talco and a gathering system in the pool. The company now ships oil from the pool to its refinery at Baytown, on the Gulf. It will take between 60 and 65 miles of pipe to connect the pool with the Longview pump station. Either 8 or 10-inch pipe will be laid.

Production of the Talco pool up to June 8 was 46,635 bbls. Three loading racks are now being used for shipping out the crude. Humble Oil & Refining Co. has a 6-car rack, Bill Hinton has a 6-car rack and the Independent crude Oil Trading Co. owns a 10-car rack.

Court Action

An important court action has been brought by the Humble Oil & Refining Co. against the Texas Railroad Commission and R. R. and B. C. Morrison, seeking cancellation of a permit given the latter operators to drill a test on a 1¾-acre tract in the C. Payne Survey in the Talco pool. The suit was brought under Rule 37, spacing regulation of the commission, which has been upheld in a couple of such cases pertaining to permits granted for drilling on small tracts or exception wells in the East Texas field, and if a restraining order is granted by the Ninety-eighth District Court at Austin, in which the suit was filed, it will have important bearing on further development of the field, as many independents have secured applications to drill on town lots and other small tracts, all of which may be subject to cancellation under the rule. It is an important case and will be closely followed by all holding leases in or interested in the pool. Many small tracts, for which permits have been issued to drill, surround a number of the larger leases, which are mainly held by major companies, which would force the majors to drill many offset wells to the small tracts. This court action may forestall such a drilling campaign.

A hearing will be held on the Talco pool at Paris, Tex., on July 15. A previously scheduled hearing, set for May 29, was canceled. Well spacing, drilling and completion of wells in the pool will be main topics of the meeting. The daily per well allowable is now 135 bbls.

Wildcatting

The Texfornia-Manning No. 1 Hocker and Hughes, interesting wildcat about 10 miles northeast of the Talco pool, across the river in Red River County, in M.E.P.&P. Survey, which has been shut down for several weeks at 200 feet after setting surface pipe, resumed drilling operations this week, Dale Sneed, independent operator at Tyler, assuming charge of drilling operations after acquiring an interest in the test and block. Contract depth is 4,500 feet, which gives sufficient depth, according to correlations, to test the Paluxy sand, pay member of the Talco pool. The Woodbine will also be tested in this wildcat. Elevation is 307 feet.

The North Texas Syndicate No. 1 Haynes and McQuistion, located 4 miles northeast of Garrett's Bluff in Lamar County, was abandoned at a total depth of 1,871 feet. Elevation is 443 feet. Another wildcat abandonment was the J. K. Wadley test on the Gillespie lands in Upshur County. Total depth is 3,757 feet. Elevation is 386 feet.

C. H. Moreau, of Oklahoma City, has leased approximately 2,000 acres, 13 miles northeast of Bonham, in Fannin County, contract calling for a test to spud by September 6. The block falls in the Darnall, Lloyd, Tilton and adjacent surveys.

Parties buying for independents and majors around the town of Peerless, and along the fault plane in Hopkins County, which is to the west of the Talco pool, have been paying exceptionally high prices for wildcat acreage in the area, prices running as high as $50 and $60 per acre, although the majority of the leases were obtained for $10 per acre.

The Wood Petroleum & Royalty Co. has blocked approximately 10,000 acres, of which 8,000 fall in Hunt and the remainder in Hopkins County, a Trinity test scheduled to be put down on same.

The Heath Refining Co., of Gladewater, has staked location for a test 1 mile northeast of Paris in Lamar County, holding some 4,000 acres around the location. Harrison and Abercrombie are also reported moving in material for a Georgetown lime test 5 miles east of Paris, near Reno, in Lamar County.

East Texas Field

Out of the 48 tests completed in the East Texas field this week, two proved dry and an even dozen were placed on the pump before completing, which is a high percentage of pumpers for the number of completions. Two were completed as swabbers and one was put on gas lift.

Daily Per Well Allowable Cut

This week the Railroad Commission ordered the hourly potential factor cut from 2.5 per cent to 2.32 per cent, which will curtail all non-marginal wells and cut back the production in the field materially. The allowable for the field has been 437,760 bbls. per day. This new hourly potential factor is bringing the daily per well allowable nearer and nearer the marginal well allowable of 20 bbls. per day, with chances for court action being instituted against the Railroad Commission if the field is continued to be curtailed.

Freestone County Wildcat

Tom Sharp and others of Corsicana are drilling a wildcat on the E. E. Lamb 100-acre tract in the Howard Survey, 2½ miles southwest of Streetman in Freestone County. H. B. Miller of Wortham, assembled the block for the wildcat test which is expected to drill 3,300 feet of hole in one week's time.

New Activity in Old Pool

The old Nigger Creek field, south of the Navasota River and south of the Nigger Creek pool in which more production has recently been discovered in Limestone County, is to see renewed activity. The Monte Oil Co., which recently brought in a small well on the Rosson farm in the Nigger Creek field, is moving rig to the new location in the Cedar Creek field. The former field was discovered in 1926 and depleted in 1931 and the latter discovered in 1927 and depleted by 1931. The former produced some 2,998,810 bbls. and the latter 297,945 bbls. according to records compiled by Paul Martin, chief scout for the Pure Oil Co., Fort Worth.

EAST CENTRAL TEXAS COMPLETIONS

Anderson County

Cayuga Oil & Gas Co. No. 3 Williams, total depth 4,084 feet, 72 bbls. in 24 hours through one-eighth inch choke. Tide Water & Seaboard Oil Corp. No. 1 Reagan, total depth 5,312 feet, 35 bbls. in 17 hours through three-thirty-seconds inch choke; No. 5 Sullenberger, total depth 4,046 feet, 60,000,000 feet gas.

Ellis County

Beasley Oil & Gas Co. No. 1 Roller, abandoned 160 feet, 3½ miles northeast Ennis.

Franklin County

Lucey Petroleum Co. and others No. 2 Crawford, total depth 4,300 feet, 24 bbls. per hour through one-quarter inch choke, elevation 370 feet.

Rains County

O. L. Greer No. 1 Bullard, abandoned 117 feet, 2 miles southwest of Emory.

Upshur County

J. K. Wadley No. 1-C Gillespie, dry and abandoned 3,757 feet, elevation 386 feet.

Lamar County

L. W. Dennis No. 1 W. C. Clark, location abandoned, 3 miles northeast

of Reno. North Texas Syndicate No. 1 Haynes-McQuistion, dry and abandoned 1,871 feet, elevation 443 feet, 4 miles northeast Garrett Bluff.

Titus County

H. B. Ownby and others No. 1 F. Jones, total depth 4,347 feet, 12 bbls. per hour through 2-inch tubing, elevation 361 feet.

EAST TEXAS FIELD

Cherokee County

Texas-Canadian Oil Co. No. 1-B Kelley, 3,715-3,780 feet, dry and abandoned; No. 7 Keel, 3,681-3,682 feet, 18 bbls. in four hours, on pump.

Gregg County

Arkansas Fuel Oil Co. No. 15 Whittaker, 3,515-3,540 feet, 28 bbls. in 15 minutes. Cox & Hammond No. 8 Lacey, 3,508-3,575 feet, 60 bbls. per hour. Empire Gas & Fuel Co. No. 16 Aiken, 3,561-3,571 feet, 80 bbls. per hour. Gilcrease Oil Co. No. 3 Fenton, 3,601-3,638 feet, 23 bbls. in 15 minutes. Phillips No. 1 York, 3,588-3,595 feet, 20 bbls. in 12 hours, swabbing. Selby Oil & Gas Co. No. 25-A Snavely, 3,575-3,589 feet, 15 bbls. in 30 minutes; No. 33-B Snavely, 3,572-3,588 feet, 30 bbls. in 30 minutes. Stanolind Oil & Gas Co. No. 43-B McKinley, 3,629-3,666 feet. 15 bbls. in 15 minutes; No. 45-B McKinley, 3,544-3,596 feet, 16 bbls. in 15 minutes. Sun Oil Co. No. 12 Shultz, 3,584-3,638 feet, 45 bbls. per hour; No. 12-B Tooke, 3,567-3,587 feet, 45 bbls. per hour. Grace Oil Co. No. 2 Hughey, 3,512-3,532 feet, 20 bbls. in four hours, on pump. Gulf Oil Corp. No. 87 Hilburn, 3,551-3,577 feet, 62 bbls. per hour. Iowa-Payne Oil Co. No. 2-B Walker, 3,671-3,673 feet, 60 bbls. in 30 minutes. Killam and Solley No. 1-A Thomas, 3,685-3,686 feet, 13 bbls. per hour, 8 per cent salt water, on pump; No. 1 Laird, 3,684-3,685 feet, 18 bbls. per hour, 8 per cent salt water, on pump. Lone Pine Oil Co. No. 2 Clary estate, 3,526-3,546 feet, 20 bbls. in 24 hours, on pump. Sinclair Prairie Oil Co. No. 58-A King, 3,465-3,515 feet, 35 bbls. in 30 minutes; No. 59-A King, 3,468-3,510 feet, 27 bbls. in 25 minutes. Murko Oil Co. No. 2 Hale, total depth 3,567 feet, 20 bbls. in two hours, on swab. Sun Oil Co. No. 13 Pentecost, 3,581-3,624 feet, 53 bbls. per hour through three-quarters inch choke.

Smith County

Big Indian Oil Co. No. 18 Wolford, 3,710-3,711 feet, 50 bbls. per hour. Hanbury No. 2 Sharp, 3,677-3,679 feet, 50 bbls. in 30 minutes; No. 4 Sharp, 3,717-3,718 feet, 50 bbls. in 30 minutes. McMurray No. 11 Roberson, 3,811-3,812 feet, 15 bbls. in 20 minutes.

Rusk County

Cook Drilling Co. No. 5 Mayfield, 3,552-3,620 feet, 30 bbls. in 24 hours, on pump. Hardin No. 3 Peterson, 3,525-3,607 feet, 60 bbls. in two hours. Overton Refining Co. No. 5 Jones, 3,654-3,661 feet, 200 bbls. in 10 hours. Stewart Oil Co. No. 6 Holt, 3,505-3,526 feet, 5 bbls. per hour, on pump. DeArman and others No. 5 Crook, 3,578-3,672 feet, 100 bbls. in five hours, on swab. Farrell & Co. No. 9 Hammett, 3,644-3,693 feet, 9 bbls. per hour, on pump. Gant and others No. 7 Goldsberry, 3,548-3,587 feet, 8 bbls. per hour, on gas lift. Humble Oil & Refining Co. No. 20 Mullikin, 3,675-3,760 feet, 45 bbls. per hour; No. 8 Wooley, 3,679-3,682 feet, 74 bbls. per hour. Marathon Oil Co. No. 19 De Guerin, 3,616-3,692 feet, 20 bbls. in 15 minutes. Bullard Oil Co. No. 2 Bradford, 3,543-3,609 feet, 10 bbls. per day, on pump. Retsal Drilling Co. No. 4 Coates, 3,562-3,606 feet, 13 bbls. per hour, on pump. Sinclair Prairie Oil Co. No. 6 Bradford, 3,621-3,698 feet, 20 bbls. per hour, on swab. Stern & Graham No. 1 Hart, junked and abandoned 3,305 feet.

Upshur County

General American Oil Co. No. 3-B Free, 3,712-3,713 feet, 30 bbls. per hour. Danciger Oil & Refining Co. No. 7 Stinchcomb, 3,635-3,648 feet, 22 bbls. per hour. Humble Oil & Refining Co. No. 33 Edwards, 3,635-3,648 feet, 22 bbls. per hour. Magnolia Petroleum Co. No. 21 Hampton, 3,671-3,681 feet, 35 bbls. per hour. Nathan Oil Co. No. 4 Victory, 3,589-3,591 feet, 40 bbls. per hour; No. 3-C Victory, 3,592-3,610 feet, 20 bbls. per hour. Rutledge and Boller No. 7 Todd, 3,684-3,694 feet, 22 bbls. in 30 minutes. Tide Water and Stanolind Oil & Gas Co. No. 46-B Flewellen, 3,719-3,846 feet, plugged back to 3,750 feet, 9 bbls. in 10 minutes. H & H Drilling Co. No. 1 Medlin, 3,739-3,740 feet, 45 bbls. in five hours, on pump.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, June 20.—Crude oil and naphtha production from all Alberta fields in April totaled 94,230 bbls. compared with 101,857 bbls. in March. Turner Valley naphtha production dropped from 97,726 bbls. to 90,506 bbls., but Turner Valley light crude increased from 1,249 bbls. to 1,495 bbls. Red Coulee light crude was down from 2,020 bbls. to 1,490 bbls., and Wainwright heavy crude increased from 732 bbls. to 739 bbls. The Skiff field, which produced 130 bbls. of heavy crude in March, recorded no production in April.

Detailed figures show that in Turner Valley the Royalite Oil Co. produced 49,183 bbls. in April, and the Mercury-Miracle group 10,316 bbls. Century Royalties No. 1 ranked third, and was the largest individual producing well, with 5,039 bbls., and Model Oils ranked fourth with 4,884 bbls. for the month. British Dominion Oil & Development Corp. No. 4, drilling in LSD 6, section 28-18-2w5, took 2,428 bbls. production during the month. Practically every producing unit showed a lower production compared with March.

Of the Red Coulee production, the Vanalta wells delivered 1,173 bbls., while Terminal Oil Co. No. 1 on the Del Bonita structure, which produced 450 bbls. in March, had no production in April. Of the four wells pumping in the Wainwright field, Edmonton-Wainwright No. 1 was the largest with 311 bbls.

South Turner Valley

In the South Turner Valley field, in Alberta, Turner Valley Royalties No. 1 west side test, LSD 13, section 28-18-2w5, is below 6,696 feet and more than 300 feet in the Madison lime. It is believed entering the second porous horizon, and some gas is forcing itself through the rotary fluid. A producing well here would prove a considerable area to the southwest of the proven field. British American Oil Co. is assisting in financing completion of the test. In LSD 12, same section, immediately to the south, Richfield Royalties, Ltd., has a location, to which rotary equipment will be moved immediately on completion of the Turner Valley Royalties test. Farther south and east in the same section, British Dominion Oil & Development Corp. No. 4, LSD 6, is deepening in the lime below 6,385 feet. At this depth it is more than 547 feet in the lime and has considerable wet gas with naphtha recovery around 75 bbls. a day.

In section 21-18-2w5, Highwood-Sarcee Oils No. 2, LSD 1, got a good show of light crude in brown sand of the Dalhousie between 5,300 and 5,310 feet and is deepening below 5,360 feet. Location is the farthest southeast in the field, and a half mile south of the nearest producer. In the north end of the same section, Sovereign Royalties No. 1 Myers & Wright, LSD 14, is moving in rotary equipment to resume from 2,333 feet.

Sterling Pacific No. 3, LSD 13, section 33-18-2w5, is below 2,086 feet.

High River—Aldersyde

In the High River-Aldersyde area east of Turner Valley, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, is deepening below 6,746 feet.

Tests in the Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is below 5,581 feet.

On the Jumping Pound structure west of Calgary, Northwest Co. No. 4 Bow River, LSD 2, section 31-24-4w5, is deepening after running casing to 1,660 feet.

On the Rickert structure west of Turner Valley, Paramount Oils No. 1, LSD 2, section 28-19-4w5, is getting close to 6,000 feet with diamond drill.

On the Pekisko Hills structure, Pekisko Co. No. 1, LSD 6, section 6-17-2w5, is in very hard lime below 3,536 feet and will put on a third drilling crew.

On the Watson structure, north and west of Lundbreck, Mar Jon Oil Co. No. 3, LSD 3, section 4-10-2w5, is deepening after getting the green shale marker at 4,652 feet. It is apparently in the Blairmore formation.

Turner Valley Pressure Tests

Alberta government experts under the supervision of C. W. Dingman, director of the petroleum and natural gas division of the lands and mines department, are making pressure tests throughout the Turner Valley field. Under government regulations, Turner Valley wells are operated at about 40 per cent of open flow; and tests of flow and pressure are made annually, on the basis of which new quotas can be fixed for the various wells. While the tests are in progress, producing wells are shut in, the field being divided into different areas for this purpose.

Pouce Coupe Test

In the northern foothills west of Peace River, Canada-Empire Crude Oil Syndicate, headed by J. I. Hill of Calgary, has located its No. 1 test about 8 miles east and north of Rolla, British Columbia, and 20 miles from Pouce Coupe, Alberta. Location was made recently by Mr. Hill assisted by Dr. J. O. G. Sanderson, geologist. D. McAllister of Calgary will have charge of the drilling. The Hill interests some time ago secured an exploration permit covering 49,703 acres in Townships 80-11w6, 80-12w6 and 80-13w6. Heavy duty equipment capable of drilling to 6,000 feet will be shipped from Calgary. The most important previous drilling in the Pouce district was Imperial Oil No. 1, LSD 7, section 26-80-13w6, drilled in 1923 to 3,057 feet which got gas in five horizons between 1,673 feet and 2,732 feet with an aggregate flow of 10,000,000 feet a day.

Tar Sand Operations

In the Athabaska district, northern Alberta, Abasand Oils, Ltd., has commenced construction of a mile of road from McMurray to the site of the company's proposed development. Separation and refining equipment will be erected. Paul Schmidt is in charge of the construction party.

International Bitumen Co., headed by R. C. Fitzsimmons, is resuming operation of its plant at Bitumont, north of McMurray, eight men being employed. The plant this summer will be enlarged to produce 300 bbls. a day, the enlarged plant to be in full operation by next fall.

Ribstone Field

In the Ribstone field, east central Alberta, Dina Oil Co. has commenced work on the reconditioning of the Meridian wells. The Ribstone field, east of the Wainwright field and close to the Saskatchewan boundary, was opened about 1930 when Meridian Oils, Ltd., brought in a fair production of heavy asphaltic crude from a cretaceous sand at 1,827 feet. Nine tests were drilled by various interests, four being producing wells and for some months a fair production of heavy crude was taken. Ultimately the wells were shut in. The Dina Oil Co. is cleaning out Meridian No. 3, LSD 4, section 16-45-1w4, and is planning to recondition the four original wells and drill some additional tests to the same horizon.

Ontario Operations

In the Brownsville field, Oxford County, Ontario, Archie Treleaven

(Continued on Page 113)

Southwest Texas District

By
GEORGE WEBER

SCATTERED TESTS SHOW OIL, WITH DUVAL AREA LEADING

SAN ANTONIO, Tex., June 22.—Scattered prospects for new oil production featured the week's activity in Southwest Texas. Developments in a number of wildcat and field tests indicated the opening of new fields, and the extension and opening of new horizons in existing ones. Duval County led in the number of such developments.

Two rank wildcats, one test in the North Kohler gas field, and a northwest outpost to the Seven Sisters field, all in Duval County, encountered showings of production, while tests in Bee and Jim Wells Counties also had oil showings. Extension wells were completed or were nearing that stage in the Seven Sisters, Pearsall, Saxet Heights and Taft fields. In addition, a new sand was encountered in the new Bentonville field, showing gas and a trace of oil.

Activity heightened in the lower Coastal area, due to added tests going down in the Saxet field of Nueces County, and increased drilling in San Patricio County. The Laredo district showed some decline in completions, with drilling programs tapering in the Loma Novia field. Other Duval and Webb County fields, particularly Lopez, Hoffman and Seven Sisters, show sustained or increased activity.

What is considered the best current indication of a new field was developed by the Conservative Oil Co. No. 1 Duval County Ranch Co. in the SW cor. NW of Survey 51. The test, located about 3 miles west of the Sarnosa field, cored oil sand at 1,533-41 feet and salt water sand at 1,541-51½ feet. A drill-stem test taken at 1,533-53 feet recovered 550 feet of oil and 200 feet of salt water. The test is bottomed at 1,553 feet and operators will set casing on the bottom and perforate for attempted production.

Southeast of the Loma Novia field, in Survey 88, the C. G. Glasscock No. 2 Milano Land & Garden Co. wildcat encountered sand at 3,275 to 3,291 feet, which showed saturation. Two drill-stem tests were attempted, but the packer failed to hold. The operators are setting casing.

Oil in Gas Field

The first oil production in the North Kohler gas field was brought in late in the week by Mills Bennett Production Co. No. 2 Peters, located in the northwest corner of Survey 178. The crew made a drill stem test at 2,619-33 feet, recovering 1,100 feet of pipe line oil. Casing was set and plugs drilled, and latest reports stated it was flowing from 10 to 15 bbls. of fluid per day into the pits.

A slight extension on the southwest edge of the Seven Sisters field was made during the week, when the Illinois Petroleum Co. No. 1 Hazelwood, in Survey 110, was completed for small production. On the northwest, Dulce, Henderson & Harvey No. 1 Hagist, SE cor. Survey 271, cored sand showing saturation at 2,416-25 feet, but a drill-stem test recovered only gas and salt water. The test will be cored deeper. Seven Sisters continues to gain in importance and drilling development, and promises to be one of the outstanding fields of Southwest Texas. Drilling is active in all sections of the field, and it has been defined by dry holes at few points as yet. During the week four producers were brought in, and one test was abandoned as dry. It was the Pan American No. 4-A Welder in the northwest part of section 381, a west-northwest edge test.

Loma Novia, while still the center of the greatest drilling activity, completed eight new wells, a further decline from the past week's developments. This is due to the drilling of several inside leases, which activity over several months accounted for the most of this field's development.

Lopez Attracts Attention

On the western edge of Duval County, the recent completion of Magnolia Petroleum Co. No. 1 Peal in Survey 383 has incited considerable interest in the Lopez field, to which it constituted a northeast extension. Three offset locations have been staked, and operations are beginning on the Starr Development Co. No. 1 Peal in Survey 796. This drilling is expected to greatly develop the Lopez field, and according to present indications, it will become one of the most important producing areas in the section. Six new producers were completed in the field in the past week.

Drilling in the smaller fields of Duval County continues to gain. A new test for the old Palangana dome is starting up, and the Loma Vista field east of Loma Novia is promised another test with the staking of a location by Pan American. The field, consisting of but one producer, received a setback recently when the second test, an offset to the discovery well, was abandoned as dry. The Hoffman field is showing considerable potential importance as more and more operators enter the drilling picture. One well was completed in Hoffman during the week, and six tests are drilling.

Interest in the lower coastal district centered on several different developments. In Jim Wells County, a wildcat, E. M. Jones No. 1 Robert Adams, located in Block 47 of the Robert Adams ranch, had a showing of oil in sand cored at 4,703-26 feet. An odor of oil and discoloration were noted, but a 15-minute drill-stem test at 4,695-4,717 feet showed only 350 feet of mud, cut with oil. The test will be cored deeper to underlying sands. No. 1 Adams is west of the town of Alfred.

Near the new Bentonville field in the same county, a possible second producing sand was encountered in LaJita Corp. No. 1 Pope, about 2 miles north of the discovery well of the field. Sand at 4,518-24 feet showed dry gas and 1 joint of oily mud on a 10-minute drill-stem test. The test is coring ahead to the sand from which the Bentonville well is producing at 5,380 feet.

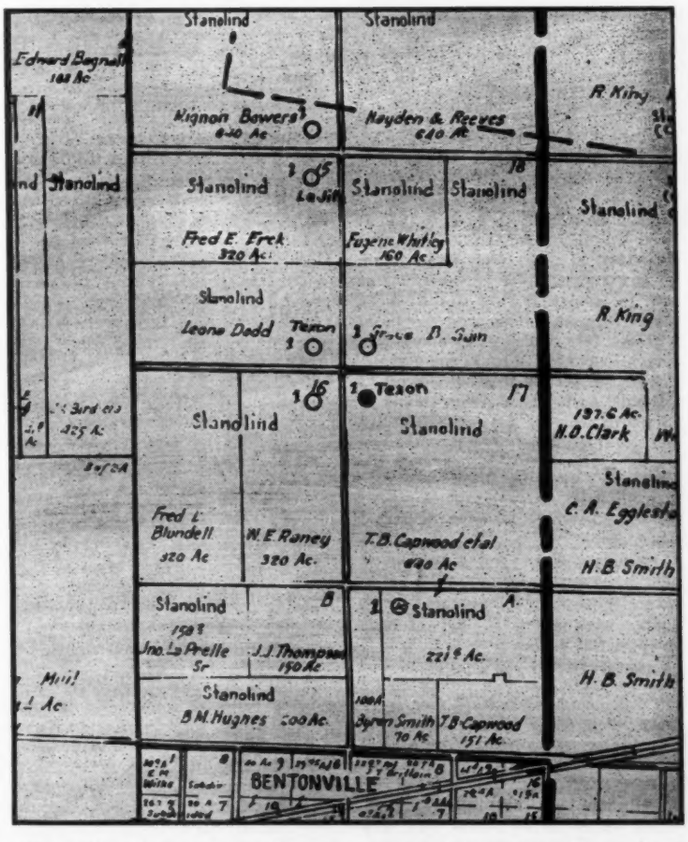
Nueces County

In Nueces County, the 5,800-foot sand, which has attracted the attention of operators for several weeks, was defined on the south by the failure of Conroe Drilling Co. No. 1-B Rand Morgan. The test is in Survey 403. Operators will continue drilling to explore possibilities for opening of even deeper production in the rapidly developing field. Three producers were completed during the week. One was from the 5,800-foot Frio horizon, and the other two were bottomed in the 4,400-foot sand which was opened near Clarkwood. An outpost test was abandoned during the week. Southern Minerals Corp. No. 2 Rand Morgan, located about 1¾ miles northwest of production was abandoned at 6,005 feet, having failed to find production.

Saxet Heights

In the Saxet Heights field, a slight southeastward extension was added to the producing area with the completion of W. F. Stone No. 1 Dryer, one of the best producers in the field. Development of the Corpus Christi or Saxet Heights field is still continuing at a rapid and erratic pace with drilling on small lots varying in size down to 2 acres. The center of activity has moved to the east half of the field, where some good producers have been completed with relatively low gas-oil ratios.

(Continued on Page 114)



When the Bentonville field was opened last month by Texon Drilling Co.'s No. 1 Capwood, several tests were immediately begun. Of these a north offset and a northwest diagonal offset Stanolind Oil & Gas Co.'s No. 1 Sain, and Texon Drilling Co. No. 1 Dodd respectively, have missed the sand and are drilling deeper. The west offset, Stanolind's No. 1 Raney is expected to make a well, however, and the other four tests in the vicinity are approaching the sand

Rocky Mountain Area

By
T. R. INGRAM

BARNSDALL HAS 18,000-BBL. WELL IN NEW MEXICO FIELD

DENVER, Colo., June 22.—Organization of a new company to take over the 20,000-acre Derby block near Denver and drill a deep test was completed this week. The Indian Territory deep test to the Arbuckle lime in Washington County, Colorado, has spudded.

The Wyoming State Land Board has adopted new regulations liberalizing its leases on school land. The Stanolind Oil & Gas Co. completed its No. 20 State-Ridgely in Grass Creek for 690 bbls. on the pump from the Embar. The Continental Oil Co. No. 4 Joss, in Lance Creek, flowed 312 bbls. an hour, the largest Sundance sand well in the field. General Petroleum Corp. of California has blocked up 100,000 acres in Sweetwater County, which it will shoot. Conway Oil Co. test in the Dewey district, Osage County, has showing of oil above the Madison lime.

Crude oil cuts in northern Montana fields brought strong protests from producers. Drilling programs may be curtailed. Daniels Petroleum Co. test in Hardin County, brought a dose of 20,000 bbls. of water a day, valuable for irrigation. Three producers, one swabbing 250 bbls. initial, were completed in the Cut Bank field. Kevin-Sunburst had one 100-bbl. completion.

Glen Ruby's test in the Green River district of Utah, was dry and abandoned.

NEW MEXICO

One of the largest producers to be completed in New Mexico in recent months was Barnsdall Oil Co. No. 5 Cooper, C NE SE section 12-20-36, in the Monument area, Lea County. It had a natural flow of 18,144 bbls. of oil through casing and tubing in the first 24 hours. Top of oil pay was 3,790 feet; total depth, 3,890 feet. Several showings were encountered before the pay horizon was encountered.

The next biggest New Mexico completion of the week was Shell Petroleum Corp. No. 4 Sanger, SE SW SW SW section 27-18-38, in the Hobbs field. It flowed 7,474 bbls. of oil through casing and tubing in the first 24 hours after acidizing. Gas gauged 10,281,000 feet. Oil pay was had at 4,202 to 4,221 feet, total depth.

Other Monument completions follow: Gulf Oil Corp. No. 1 Williams, C NW SE section 29-19-37. It had pay at 3,845-3,935 feet, total depth, was acidized and flowed 630 bbls. of oil in 24 hours. Same operators No. 1 Burk, C NE NE section 28-19-37, was dry and abandoned at 4,020 feet, total depth. Amerada Petroleum Corp. No. 4 State "O", C NE NE section 30-19-37, had the pay at 3,850-3,970 feet, total depth, and flowed 1,548 bbls. naturally through tubing in 24 hours. Empire Oil & Refining Co. No. 3 State "E", C NW SW section 30-19-37, flowed 3,192 bbls. naturally through tubing in 24 hours and was completed at 3,965 feet, total depth. Top of pay was 3,845 feet. Texas Co. No. 3 Phillips, C SW NW section 6-20-37, had a natural flow of 3,192 bbls. through tubing in 24 hours from pay at 3,813-3,896 feet, total depth. Gulf Oil Corp. No. 3 Graham-State "C," C SW NE section 24-19-36, had pay at 3,900-4,030 feet, total depth. After acidizing, it flowed 468 bbls. on gas lift in 24 hours. Same operators No. 4 Graham-State "C," C SW SE section 24-19-36, was acidized and flowed 912 bbls. in 24 hours through tubing. It topped pay at 3,912 feet; total depth, 4,017 feet. Same operators No. 1 J. W. Smith, C SE NE section 34-19-36, flowed 948 bbls. in 24 hours after acidizing, with 1,590,000 feet of gas. Production was from lime at 3,870-3,970 feet, total depth. Texas Co. No. 1 State "J", C NE SW section 24-19-36, had pay at 3,925-4,050 feet, total depth, and flowed 68 bbls. through tubing in 24 hours after acidizing. Gas gauged 1,250,000 feet. Same operators No. 4 State "E", C NE SW section 1-20-36, flowed 3,648 bbls. naturally in 24 hours from pay at 3,830-90 feet, total depth. Sun Oil Co. No. 1 State, C NE NE section 25-19-36, was acidized and flowed 2,016 bbls. through 1-inch tubing choke from pay at 3,859-3,988 feet, total depth.

Shell Petroleum Corp. No. 1 J. A. Foster, C SE SE section 34-19-36, was completed at 3,957 feet, total depth, in pay topped at 3,712 feet. After acid treatment, it flowed 1,980 bbls. of oil through tubing and produced 2,000,000 feet of gas in 24 hours. Anderson Prichard Oil Corp. No. 1 State, C SW NW section 2-20-36, flowed 1,128 bbls. naturally through tubing in 21 hours. It had pay at 3,810-3,910 feet, total depth.

Eunice Completions

In the Eunice field, Continental Oil Co. No. 2-B-18 Meyer, C NE NW section 18-21-36, was completed at 3,934 feet, total depth, in pay topped at 3,873 feet. It flowed 2,400 bbls. of oil naturally through tubing choke in 24 hours, with 2,000,000 feet of gas. Same operators No. 1-A-22 Elliott, C SW SW section 22-22-37, flowed 312 bbls. naturally through tubing choke and was completed at 3,552 feet, total depth. Top of pay was 3,539 feet. Tide Water Oil Co. No. 1 State "G," C SE NE section 21-21-36, had pay at 3,845-3,906 feet, total depth. It flowed 960 bbls. naturally through tubing choke in 24 hours and was completed. Landreth Production Co. and Ohio Fuel Supply Co. No. 1 State "E," C SW NW section 22-21-36, flowed 1,320 bbls. through tubing choke in 24 hours and was completed at 3,900 feet, total depth. Top of pay was 3,856 feet.

Continental Oil Co. No. 1-A-22 Elliott, C SW SW section 22-22-37, was completed in lime pay at 3,539-3,552 feet, total depth. It flowed 312 bbls. of oil naturally through tubing choke in 24 hours.

In the Hardy area, Ohio Oil Co. No. 1 Turner, C NE SE section 29-21-37, was acidized and flowed 70 bbls. of oil through tubing in 24 hours. It had pay at 3,710-3,800 feet, total depth.

One small producer was completed in the Maljamar field. It was the Maljamar Oil & Gas Co. No. 6 Baisch, C NW SE section 21-17-32, which was acidized and flowed 42 bbls. through tubing in 24 hours, with an estimated 500,000 feet of gas. It had pay at 3,857-3,950 feet; total depth, 4,129 feet; plugged back to 3,950 feet.

In Eddy County, Premier Petroleum Corp. No. 2 Dexter "E," NW SW NE section 20-17-30, was acidized and flowed 131 bbls. of oil through tubing in 24 hours. It was completed in pay at 3,130-3,275 feet, total depth.

Eunice Area

Gulf Oil Corp. No. 8 Bell-Ramsey-State, C NW NW sec. 4-21-36. T.D. 3,870 ft.; flwd. 25 B.P.D. after acidizing; resetting packer.

Empire G. & F. Co. No. 1 State "D," C SE NE sec. 32-21-36, ⅝ mi. N part of No. 157 lse. T.D. 3,941 ft.; acidized; waiting.

Gulf Oil Corp. No. 2 Janda "B," C NE SE sec. 32-21-36. T.D. 3,880 ft. in l.; swbd. dry; S.D.

General Crude Oil Co. No. 2 State "E," C NE SW sec. 32-21-36. Drlg. 3,967 ft.

Devonian Oil Co. No. 4 State-Heasley, C SW SW sec. 5-21-36. T.D. 3,875 ft.; swbg. to test.

Shell Pet. Corp. No. 1 State "J," C SE SW sec. 32-20-37. T.D. 3,845 ft.; acidized; flwd. 32 bbls. in 7 hrs.; set packer at 3,765 ft.; reacidized; tstg.

Gulf Oil Corp. No. 9 Bell-Ramsey, C SW SW sec. 4-21-36. T.D. 3,735 ft.; set 5½-in. csg.

Gulf Oil Corp. No. 4 Orcutt, C SE NE sec. 6-21-36. T.D. 3,885 ft.; tstg.

Gulf Oil Corp. No. 7 Arnott-Ramsey "C," C NW NE sec. 21-21-36. Drlg. 3,820 ft.

Continental Oil Co. No. 6-A-18 Meyer, C NW NE sec. 18-21-36. T.D. 3,836 ft.; set 5½-in. csg.

Continental Oil Co. No. 11-B-4 Meyer, C SE SE sec. 4-21-36. Cellar and pits.

Samedan Oil Co. No. 1 Marshall, C SW NW sec. 12-21-36. Drlg. 3,826 ft.

Continental Oil Co. No. 5-A-18 Lockhart, SE SE SW sec. 18-21-36. Drlg. 3,265 ft.

Texas Co. No. 2 State Aggies, C SW SE sec. 31-20-37. Drlg. 3,469 ft.

Humble O. & R. Co. No. 1 State Aggies, C SE SW sec. 31-20-37. T.D. 3,850 ft.; tstg.

Continental Oil Co. No. 12-B-4 Meyer, C SE SW sec. 4-21-36. Drlg. 3,685 ft.

Devonian Oil Co. No. 5 State-Heasley, C NW SW sec. 5-21-36. Cellar and pits.

Devonian Oil Co. No. 6 State-Heasley, C NE SW sec. 5-21-36. Loc.

Humble O. & R. Co. No. 2 Knox, C SW SE sec. 10-21-36. Drlg. 1,780 ft.

Gulf Oil Corp. No. 2 Collins, C NE NW sec. 14-21-36. Rig.

Humble O. & R. Co. No. 2 State-Aggies, C SW SW sec. 31-20-37. Cellar.

Gulf Oil Corp. No. 10 Bell-Ramsey-State, C NW SW sec. 4-21-36. Rig.

Atlantic Oil Prod. Co. No. 2 State "K," C NE SW sec. 6-21-36. Drlg. 2,530 ft.

Gulf Oil Corp. No. 3 Houston, C SW SE sec. 7-21-36. Rig.

Gulf Oil Corp. No. 1 H. L. Houston, C SE SW sec. 7-21-36. Rig.

Humble O. & R. Co. No. 6 Adkins, C NW NW sec. 10-21-36. Rig.

Atlantic Oil Prod. Co. No. 1 State "L," C SW NW sec. 11-21-36. Drlg. 1,390 ft.

Mid-Continent Pet. Corp. No. 1 Marshall, SW SE SE sec. 11-21-36. Drlg. 270 ft.

Gulf Oil Corp. No. 2 Collins, C SW NE sec. 14-21-36. Rig.

Gulf Oil Corp. No. 3 Bell-State "C," C NE NW sec. 15-21-36. Rig.

Gulf Oil Corp. No. 2 Janda "C," C SW SW sec. 15-21-36. Drlg. 1,000 ft.

Gulf Oil Corp. No. 8 Arnott-Ramsey "C," C SW SE sec. 21-21-36. Rig.

Skelly Oil Co. and Humble O. & R. Co. No. 1 Adkins, C NE NW sec. 10-21-36. Rig.

Continental Oil Co. No. 2-B-14 Lockhart, C NW NW sec. 14-21-36. Rig.

Continental Oil Co. No. 1-D-15 State, C SE NE sec. 15-21-36. Drlg. 1,490 ft.

Gulf Oil Corp. No. 5 Orcutt, C NW NW sec. 5-21-36. Cellar and pits.

Shell Pet. Corp. No. 2 State "E," C NW NE sec. 6-21-36. Loc.

Atlantic Oil Prod. Co. and Tide Water Oil Co. No. 1 H. L. Houston, NE NW NW sec. 7-21-36. Loc.

Gulf Oil Corp. No. 9 Arnott-Ramsey "C," C NE NE sec. 21-21-36. Cellar; pits.

Atlantic Oil Prod. Co. No. 2 State "L," C SE NW sec. 22-21-36. Loc.

Landreth Prod. Co. No. 1 State "D," C NW NW sec. 22-21-36. Moving in.

Hobbs Area

Shell Pet. Corp. No. 1 State "E," C E½ SE SE sec. 14-18-37. T.D. 4,374 ft.; P.B 4,178 ft.; S.D. and may abd.

National Securities Oil Corp. No. 1 Linam, NE SE SW sec. 33-18-37; wildcat. Old well P.B. from 4,238 to 4,228 ft.; swbd. sulfur. wtr.; no oil; S.D. for orders.

Monument Area

Gulf Oil Corp. No. 1 A. H. Reeves, C NW SW sec. 29-20-37. Wildcat; T.D. 3,859 ft.; P.B. 3,846 ft.; on flow valves, 60 bbls. in 24 hrs.; 94,000 ft. gas.

Sun Oil Co. No. 6 Weir, C NW NE sec. 35-19-36. Drlg. 2,994 ft.

Continental Oil Co. No. 2-A-6 Britt, C NW SW sec. 6-20-37. T.D. 3,899 ft., preparing to test.

Fred Turner, Jr., No. 1 State "A," NE NW SW sec. 2-20-36. T.D. 3,989 ft.; tstg.

Anderson-Prichard Oil Corp. No. 3 Britt, SE SW NE sec. 7-20-37. Drlg. 2,470 ft.

Continental Oil Co. No. 4 State "C," C SW NW sec. 30-19-37. Drlg. 2,977 ft.

Amerada Pet. Corp. No. 1 State "T," C SE SW sec. 25-19-36. Drlg. 3,910 ft.

Amerada Pet. Corp. No. 3 Phillips, C SW NE sec. 1-20-36. T.D. 3,046 ft. Setting 5½-in. csg.

Amerada Pet. Corp. No. 3 State "D," C SE NW sec. 1-20-36. Drlg. 3,485 ft.

Ohio Oil Co. No. 3 State-Elliott, SW SW SE sec. 30-19-37. Drlg. 3,830 ft.

Anderson-Prichard Oil Corp. No. 2 Britt "A," C NE SW sec. 6-20-37. Loc.

Skelly Oil Co. No. 1 State "E," C SE NE sec. 29-19-37. Drlg. 2,796 ft.

Continental Oil Co. No. 2-A-3 Reed, C SE NE sec. 3-20-36. Drlg. 3,840 ft.

Texas Co. No. 1 State "K," C SE SE sec. 18-19-37. Drlg. 3,680 ft.

Amerada Pet. Corp. No. 2 State "K," C NE NW sec. 29-19-37. Drlg. 3,349 ft.

Amerada Pet. Corp. No. 1 Sarah Phillips, SE SE SW sec. 33-19-37. Drlg. 3,016 ft.

Gulf Oil Corp. No. 2 Mathews, C NW SE sec. 6-20-37. Drlg. 3,235 ft.

Oilwell Drlg. Co. No. 2 State "A," C NW NE sec. 29-19-37. Drlg. 3,750 ft.

Ohio Oil Co. No. 4 State-Elliott, C SE SE sec. 30-19-37. Drlg. 3,571 ft.

Anderson-Prichard Oil Corp. No. 4 Britt, C NW NE sec. 7-20-37. Drlg. 2,483 ft.

Amerada Pet. Corp. No. 5 Weir, C SW NW sec. 35-19-36. Drlg. 2,851 ft.

Amerada Pet. Corp. No. 2 Lambert, C SW NE sec. 6-20-37. Drlg. 2,613 ft.

Gulf Oil Corp. No. 1 Ketter, C SW SE sec. 20-19-37. Rig.

Tide Water Oil Co. No. 2 State "F," C NE NW sec. 29-19-37. Drlg. 1,330 ft.

Amerada Pet. Corp. No. 2 State "P," C SW SW sec. 29-19-37. Drlg. 2,495 ft.

Empire O. & R. Co. No. 4 State "E," SW cor. sec. 30-19-37. Drlg. 1,155 ft.

Gulf Oil Corp. No. 1 Culp "B," NW NW SE sec. 31-19-37. Rig.

Gulf Oil Corp. No. 1 Phillips, NW NW NE sec. 31-19-37. Rig.

Tide Water Oil Co. No. 1 State "H," C NW SW sec. 32-19-37. Drlg. 2,492 ft.

Shell Pet. Corp. No. 1 Cooper, NW NW NE sec. 5-20-37. Drlg. 2,290 ft.

Texas Co. No. 3 State-Aggies, NE cor. sec. 20-20-37. Drlg. 400 ft.

Gulf Oil Corp. No. 5 Graham-State "C," C NW NE sec. 25-19-36. Rig.

Amerada Pet. Corp. No. 2 State "S," C SW SW sec. 2-20-36. Rig.

Continental Oil Co. No. 1-A-17 State, C SW SW sec. 17-19-37. T.D. 271 ft. Set 10¾-in. csg.

Shell Pet. Corp. No. 1 State "F," C NE SE sec. 29-19-37. Drlg. at 1,357 ft.

Amerada Pet. Corp. No. 1 Phillips "A," SW SW NE sec. 31-19-37. Rig.

Amerada Pet. Corp. No. 1 State "U," C SW NW sec. 32-19-37. Cellar.
Amerada Pet. Corp. No. 1 Gaither, C NE SE sec. 34-19-36. Total depth, 227 ft. Set 12½-inch casing.
Sun Oil Co. No. 2 State, C SE NE sec. 25-19-36. Cellar and pits.

Lea County—Miscellaneous

Texas Co. and Repollo Oil Co. No. 1 Lanehart, C NE sec. 29-25-37. T.D. 3,165 ft.; flowed 145 bbls. in 12 hours.
Landreth Prod. Co. No. 1 J. W. Grizzell, C SE SW sec. 5-22-37. Drlg. 3,424 ft., estimated 1,000,000 ft. gas.
Rowan et al No. 1 Mattern, C SW SE sec. 7-22-37. T.D. 3,585 ft. To deepen.
C. & G. Oil Co. No. 1 E. Weir, C NE NE sec. 14-20-37. Wildcat; T.D. 3,905 ft. Tested sulfur water. S.D.
Gulf Oil Corp. No. 1 E. King, C SW NW sec. 28-21-37. T.D. 3,804 ft.; flowed 56 bbls. in 12 hours. Setting packer.
Gulf Oil Corp. No. 1 W. T. McCommack, C NE NE sec. 32-21-37. T.D. 3,802 ft.; acidized; flowed 114 bbls. in 24 hrs.; to shoot.
Continental Oil Co. No. 1 J. C. Farney, C SW SE sec. 5-23-36. Wildcat. Loc.
Gulf Oil Corp. No. 1 S. J. Carr, C NW SW sec. 3-24-37. Drlg. 2,225 ft.
Gulf Oil Corp. No. 2 N. F. Humphreys, C NE NW sec. 25-25-36. Drlg. 3,232 ft.
Sun Oil Co. No. 1 Stuart, C NW NE sec. 15-25-37. T.D. 3,390 ft.; flowed 883 bbls. in 24 hrs.
Continental Oil Co. No. 2-A-19 Eaves, C SW SW sec. 19-26-37. Drlg. 3,033 ft.
Gulf Oil Corp. No. 1 J. A. Stuart, C SW NE sec. 10-25-37. T.D. 3,373 ft. To core.
Gulf Oil Corp. No. 1 L. M. Buffington, C NW SW sec. 13-25-37. Drlg. 2,715 ft.
Sun Oil Co. No. 1 Lanehart, C SE SE sec. 20-25-37. T.D. 2,757 ft.; 22,100,000 ft. gas; S.D.
Humble O. & R. Co. No. 1 Lanehart, C NE SW sec. 21-25-37. T.D. 3,565 ft. To shoot.
Magnolia Pet. Co. No. 1 E. O. Carson, C NW SW sec. 28-21-37. Drlg. 3,200 ft.
Skelly Oil Co. No. 1 Stuart, C NE NW sec. 15-25-37. Drlg. 1,740 ft.
Texas Co. No. 1 Eula Alexander, C NW SW sec. 7-21-37. T.D. 3,835 ft. Acidized, testing.
Byrd-Frost, Inc., No. 1-A-1 Wells, C NW SW sec. 1-25-36. T.D. 2,815 ft.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. T.D. 445 ft. Fishing.
Texas Co. No. 1 E. Fanning, C SE NE sec. 4-24-37. Drlg. 214 ft.
Jal Natural Gas Co. No. 1 Bates, C NW SW sec. 20-25-37. Cellar and pits.
Harry Leonard No. 2 Lanehart, C SE NW sec. 21-25-37. Drlg. 590 ft.
Culberson & Irwin No. 1 Eaves, C SW NW sec. 18-21-33. Drlg. 685 ft.
Humble O. & R. Co. No. 1 B. E. Boyd, C NW SE sec. 35-22-37. Cellar.
Argo Royalty Co. No. 1 Lanehart, SW SE NE sec. 21-25-37. Location.

Cooper Area

Plains Prod. Co. No. 1 R. L. Mosley, C NW SE sec. 34-24-37. T.D. 3,551 ft.; flowing 15 bbls. daily; may shoot.
Southern Oil Corp. No. 1 Vaughan, C SW SE sec. 15-24-36. T.D. 2,490 ft. Set 5½-inch casing.
Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-36. T.D. 3,497 ft.; flowed 82 bbls. oil in 24 hrs., 200 bbls. water per hour.
Skelly Oil Co. No. 5 Coates, C NE SE sec. 3-24-36. Drlg. 3,110 ft.

Sims Area

Samedan Oil Co. No. 1 Parks, 330 ft. from S and 400 ft. from W lines, SW¼, sec. 14-22-37. T.D. 3,708 ft.; plugged back 3,620 ft. W.O.C.
Skelly Oil Co. No. 1 Ella Simms, C NW SE sec. 3-23-37. Drlg. 3,030 ft.
Penrose & Rowman No. 2 Cary, C NE SW sec. 22-23-37. T.D. 3,570 ft. Swabbed 92 bbls. oil. To clean out.
Sun Oil Co. No. 1 Richards, C NE SE sec. 6-23-37. T.D. 3,798 ft.; testing.
Humble Oil & Ref. Co. No. 1 W. B. Farrell, C SW SE sec. 22-22-37. Drlg. 3,620 ft.
Tide Water Oil Co. No. 1 A. Waldon, C SE NE sec. 21-22-37. Drlg. 3,406 ft.
Magnolia Pet. Co. No. 1 Cary, C NE SE sec. 21-22-37. Drlg. 3,550 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. Drlg. 1,305 ft.
Continental Oil Co. No. 1-A-15 Elliott, SE SE SE sec. 15-22-37. Location.
Continental Oil Co. No. 1-A-21 Elliott, C SE SE sec. 21-22-37. Location.
Skelly Oil Co. No. 2 J. V. Baker, C NW NW sec. 27-22-37. Drlg. 2,225 ft.
Gulf Oil Corp. No. 1 F. C. King, C SW NW sec. 5-23-37. Drlg. 2,805 ft.
Penrose & Rowan No. 4 Cary, C SW NW sec. 22-22-37. T.D. 1,146 ft.; set 8⅝-in. csg.

Eddy County

Etz Bros. No. 2 State, C NW SW NE sec. 16-17-30. Drlg. 3,030 ft.
Dexter & Berry No. 1 Berry, NW NE NW sec. 21-17-30. T.D. 3,170 ft. Shut in.
Tignor, Etz & Keys No. 4 Keys, "A," C SW SE sec. 10-17-28. Drlg. 425 ft.
Grayburg Oil Co. No. 7 Burch, C NW NE sec. 19-17-30. Standardizing.
Red Lakes Oil Co. No. 7 State, NW NW SE sec. 22-17-28. Drlg. 1,025 ft.
Carper and others No. 1 Gissler "B," NW NE NW sec. 23-17-30. M.I.M.
Hammond and others No. 1 State, SW SE SW sec. 15-17-28. Rigging up mach.

Harding County

Kahay No. 1 Dae Daca, C sec. 19-20n-31e. Total depth, 1,511 ft. Setting 6 3/16 in. csg.
Clyde B. Neill No. 1 Foster, C NW SW sec. 27-21-30. Drlg. 700 ft.

De Baca County

Mid-Continent Engineering Corp. No. 1 State, C NW SE sec. 27-4n-22e. T.D. 735 ft.; U.R. 10-in. csg.

Chaves County

Comanche Drlg. Co. No. 2 Sloop & Purcell, C NE NE sec. 15-11-26. Drlg. 1,105 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norine Realty Co., Inc., No. 2 Gallegas grant, SE NW NW sec. 19-11n-4e. Drlg. 1,700 ft.

Guadalupe County

Anton Chico Dev. Co. No. 2 fee, NW NE SW sec. 20-9n-17e. T.D. 804 ft.; fsg. tools.
Ralph Knight et al No. 1 Anton Chico, SW sec. 33-9n-16e. Spd. and S.D.

McKinley County

Seward and others No. 1 fee, SE SE NE section 19-20n-9w, Red Mountain district, was dry and abandoned at 624 feet.

Al Gibbons No. 1 fee, SW SW SW sec. 22-20n-9w. T.D. 500 ft.; fshg.
S. Dysart et al No. 1 Bouton, CEL NW NE sec. 14-14n-10w. T.D. 1,490 ft.; rmg. at 775 ft.

Rio Arriba County

Larrazola & Turner No. 1 Gonzales, SE SW SE sec. 24-32n-1e. (Formerly carried in Colorado.)

San Juan County

Atchison & Galloway No. 1 Patd., C SE SE sec. 19-29n-11w. Drlg. 100 ft.
W. L. Hair No. 1 Hair, NE NW NE sec. 23-29n-11w. S.D. 900 ft.
Kutz Canon O. & G. Co. No. 1 Day, SW SW SW sec. 20-28-10w. T.D. 4,400 ft.; pulled 4½-in.; C.O. 3,900 ft.
Continental Oil Co. No. 54 Tribal, 1,980 ft. W of NE cor. sec. 2-29n-19w. T.D. 741 ft.; tested 30 bbls.; may D.D.
Nick Spatter No. 1 fee, C NE SW sec. 32-21-11w. S.D. 1,780 ft.; T.A.
Southern Union Gas Co. No. 6 Government, C NW NW sec. 19-28-10w. Completed at 2,065 ft. as gas well; not tested.

Torrance County

45 Pet. Co. No. 1 Greenfield, C NW SW sec. 17-9-8e. Drlg. 2,000 ft. in green L.

COLORADO

Adams County

A deal reported in this column last week in which a group of Denver men acquired the Derby block of 20,000 acres 15 miles northeast of Denver in Adams County and would at once proceed with the drilling of a deep test, were completed this week with the incorporation of the Oklahoma Oil Co. under the laws of Colorado for $250,000. The new company is controlled by Frank C. Myers, a well-known Denver attorney, who for the past 25 years has been associated with the Powerine Co., the largest independent distributor in this territory; E. M. Butler, an oil man from Oklahoma now residing in Colorado; and J. T. Wellwood, a Denver capitalist. Mr. Myers states that the company is fully financed and that no stock will be offered to the public.

A rotary rig was erected by the Riddle Petroleum Co. and others at a location spotted by the late C. T. Lupton, and following the drilling of a water well to 1,370 feet, the deep test spudded last winter and has been standing at 700 feet. The Riddle company is no longer connected with the operation. Drilling is being resumed and 5,000 feet of 6-inch drill stem now on the rack will carry the hole to the first objective, the Hygiene sand in the base of the Pierre, which is expected at 4,700 feet. If necessary, it will continue on down to test the Dakota series. The depth to the Hygiene is based on a correlation of the formations encountered in the water well with the Fitzsimmons test which was drilled a few miles to the south of this location. The Derby well is to be 350 feet higher than the Fitzsimmons well, which had some oil saturation in the Hygiene.

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66. Resuming at 700 ft.; (formerly Riddle Pet. Co.).
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64. T.D. 4,252 ft.; drlg. 4,250 ft.

Archuleta County

Carl D. Linstrom No. 1 Crowley, SE SE SE sec. 3-22n-2e. R.U.
Oil City Pet. Co. No. 1-A Garnett, NW NE NW sec. 25-23n-2e. S.D. 1,515 ft.; top Dakota series 1,415 ft.
Oil City Pet. Co. and Archuleta O. & G. Co. No. 1 Reeder, Lot 5 (SW SE SW), sec. 24-33n-2e. T.D. 575 ft.; U.R. 8¼-in. to bottom.
H. L. Kendrick No. 1 Crowley (unsurveyed), sec. 2-32-1. Drlg. 1,132 ft.

Baca County

Paul R. Robb Pet. Corp. No. 1 Lovett, NW NW NW sec. 24-32s-48w. Drlg. below 305 ft.

Boulder County

Boulder Prod. & Dev. Co. No. 2 Maxwell, SW SW NE sec. 24-1n-71. Loc.; (first report).

Costilla County

L. R. Lane No. 1 Midwest Land & Cattle, NW cor. section 24-31s-74, Fort Garland district, ran into a cavity at 45 feet, abandoned the hole and skidded rig a mile to the south.

L. R. Lane No. 2, sec. 25-31s-74. Spdg. in hd. gray sd.; (first report).

Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal Co., NW NW sec. 18-9n-78w. Drlg. and U.R. at 2,290 ft.; (T.D.).

Jefferson County

Ruby Hill O. & G. Co. No. 1 Braden, SE SE SE sec. 24-4s-6w. S.D. 4,475 ft.; to finance.

Larimer County

Continental Oil Co. No. 8 Buckeye-U. P., C NE SW sec. 31-10n-68. Drlg. sdy. sh. at 837 ft.

La Plata County

McGarr Pet. Co. No. 1 Pinton Mesa, CSL NE NE sec. 34-35n-12w. S.D. 3,500 ft. for 6¼-in.

Las Animas County

Mountain States Oil Corp. No. 1 Nikola, C NE SE sec. 10-34n-62w. S.D. 1,813 ft.

Lincoln County

Consolidated Smelting & Metals Co. No. 1 Hancock, NE NE SW sec. 7-17s-62. S.D. 2,050 ft. for repairs.

Moffat County

Mountain Fuel Supply Co. No. 1 Allen, NE SW SE sec. 32-12n-97w. M.I.M and drlg. wtr. well.
Mountain Fuel Supply Co., No. 1 Kuykendall, NE NE SE sec. 22-12n-100. Rng. 4¾-in. at 2,412 ft.
Texas Co. No. 3 Iles Inv. Co., 200 ft. E of W line, and 165 ft. S of N line, Lot 4, sec. 23-4s-92. Drlg. 2,145 ft.

Morgan County

Swisher et al No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line, sec. 3-4n-60. T.D. 1,449 ft.; R.U.R.

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THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NE sec. 21-26n-17w. Contracted with Perry Coon to comp.; drld. by tools; making new hole below 3,705 ft.

Park County

South Park Oil Co. No. 1 LeBert, NE NE NW sec. 21-11s-75w. Spdg. below 100 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. Drlg. 4,500 ft.; carrying 6¼-in. at 4,480 ft.

Routt County

Mid-Colo. Pet. Co. No. 1 Omoholt, NE SE SE sec. 29-4n-87w. S.D. 2,910 ft.; renewing leases before drlg. into Sundance.

Washington County

The deep test to the Arbuckle lime, expected at 7,800 feet, on the Hyde block of 33,000 acres, began spudding as a joint test of the Indian Territory Illuminating Oil Co., the Carter Oil Co. and the Foster Minerals Corp. Olson Drilling Co. has the contract and heavy-duty diesel-powered rotary is being used. The Carter Oil Co. recently acquired half of the block.

I.T.I.O.-Carter-Foster Minerals Corp. No. 1 Vorce, C NE NE sec. 28-1s-49. Cmtd. 20-in. sur. pipe at 51 ft.; attempting to run 15⅝-in. to approx. 500 ft.; projection preventing from reaching bottom.

Weld County

Continental Oil Co. No. 1 State Bank of Trenton, C SW NE sec. 21-8n-59w. Drlg. 5,735 ft.; sh. and shells.

Yuma County

Indian Territory Ill. Oil Co. No. 1 Strangways, C NW SW sec. 21-2s-43w. Operator not reporting depth; reported drlg. below 3,719 ft.

WYOMING

The Wyoming State Land Board has put into effect its new rules and regulations for the leasing of school lands. The term of leases has been extended to 10 years and restriction of number of leases to one to a person or company has been removed. Amount of land which may be held under a single lease was increased from 640 to 1,280 acres. Rentals are 25 cents per acre until discovery is made. Copies of the new regulations and lease forms may be obtained from Pierre LaFleiche, mineral inspector, Wyoming National Bank Building, Casper, Wyo.

Albany County

Geo. D. Parkinson et al No. 1 George & Hunt, NW NE SE sec. 5-17-75w. S.D. 435 ft. for mat.
California Co. No. 2 Wilson, SW SW SW sec. 18-17n-76. Bldg. rig; (first report).

Big Horn County

Jerome Drumheller has made a location on the Manderson dome for a second test in his No. 2 Government, NW NE SE section 17-49-91, 2 miles southeast of his No. 1 Government, abandoned last month at 1,315 ft.

Montana-Wyoming Oil Co. No. 1-X Allen, which was started as a relief well for No. 1 Allen, which is still burning, will be carried on down as a sand well. Ohio Oil Co. cleaned out an old well 330 feet south of the gasser to the Dakota sand and is pumping water through the sand into the burning well. It is slowly being killed and as soon as pressure is down sufficiently an attempt will be made to shoot out the flame.

J. W. Bales No. 1 Parker, C SW SW sec. 23-4-89. S.D. 690 ft. for pipe.
Joan Oil Co. No. 1 Howell, Lot 63 (NW SE NE) sec. 32-55n-97. Resuming at 1,190 ft.
Jerome Drumheller No. 2 Govt., NW NE SE sec. 17-49n-91. Loc.; (first report).
Montana-Wyoming Oil Co. No. 1-X Allen, Lot 52, sec. 18-56n-97w. Drlg. 1,505 ft.; 10-in. at 1,492 ft.; (relief well for No. 1 Allen).
Ohio Oil Co. No. 2 State, NE cor. Lot 38, sec. 36-56n-97. R.U.
Ohio Oil Co. No. 1 Orson Vail, SW NW NE sec. 23-56n-97w. Drlg. 2,274 ft.
Ohio Oil Co. No. 1 Robert Till, C SE SW sec. 24-56n-87w. Drlg. 4,841 ft. in red beds.
Peay Oil Co. No. 1 Denio, Tr., 43-C, sec. 15-55n-87w. T.D. 3,890 ft.; t ying to cmt. off wtr. through hole in pipe.
Peter Evanoff et al No. 1 McAllister, NW NE SE sec. 3-55n-97. Drlg. 2,467 ft.
Stock Oil Co. No. 1 Yates, CSL SW NE sec. 33-56n-87w. Drlg. 2,224 ft.
Taylor Oil Co. No. 1 Robinson, SW SW NW sec. 24-56n-97w. Spdg.

Carbon County

Ohio Oil Co. No. 4 Dixon, SE cor. section 34-20-78, Rock Creek field, an old well deepened from the Dakota at 3,242 feet to the Sundance, had water in the Sundance at 3,582-92 feet and has plugged back to 3,233 feet with 61 sacks to recomplete in the Dakota.

When Union Oil Co. of California No. 1 Union Pacific, a Sundance test on the Dutton Creek dome, started to core at 4,800 feet, it was found that the Muddy sand already had been penetrated at 4,785-4,819 feet. It showed oil saturation.

Ohio Oil Co. No. 1 Baker, NW NW SW sec. 2-23n-79. T.D. 1,498 ft.; C.O.
General Pet. Corp. No. 1 Union Pacific, SW NW sec. 5-19n-83w. Drlg. 2,435 ft.
Ohio Oil Co. and California Co. No. 2 Union Pacific, C NE NE sec. 35-21n-79w. Drlg. 5,171 ft. in blk. sh.
Ohio Oil Co. No. 7 Diamond Cattle, SW SW NW sec. 35-20n-78w. Drlg. 1,328 ft.
Ohio Oil Co. and California Co. No. 3 Union Pacific, C NE SE sec. 23-21n-79w. Drlg. 4,664 ft.
Ohio Oil Co. No. 2 Dixon, SE NE SE sec. 34-20n-78w. R.U. to deepen old well from 3,094 ft. to Sundance.
Sinclair-Wyoming Oil Co. No. 10 Govt., SW SE NW sec. 7-26n-89w. Bldg. rig.
Union Oil Co. of California and Mutual Oil Synd. No. 1 Union Pacific, 1,890 ft. from E line and 1,320 ft. from S line, sec. 1-18-78w. Drlg. below 4,800 ft.

Converse County

Chadron-Osage Oil Co. No. 1 State, SW SW sec. 16-32n-69w. Drlg. 2,350 ft.
J. A. Olson No. 1 Reese, C NE SE sec. 10-32n-65w. M.I.M.

Fremont County

Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. T.D. 2,550 ft.; rng. 4¾-in.
Sinclair-Wyoming Oil Co. No. 2-C Muskrat, NE SW SW sec. 1-33n-92w. T.D. 3,970 ft.; rmg. for 9⅝-in. at 2,160 ft.; prep. to core Frontier.

Hot Springs County

Stanolind Oil & Gas Co. No. 20 State-Ridgely, SE NE SE section 19-46-98, Grass Creek field, was completed at 3,990 feet in the Embar, topped at 3,908 feet, for an average of 690 bbls. a day on the pump. It is a north offset to Ohio Oil Co. No. 72 Mill Iron Cattle, which made 774 bbls. initially. Neither well drilled into the Tensleep.

California Exploration Co. No. 2 Govt., NW SW NW sec. 4-44-96. T.D. 4,245 ft.; P.B. to 4,165 ft.; shot second time with 80 qts.; C.O.
Ohio Oil Co. No. 73 Mill Iron Cattle Co., NE SW SE sec. 19-4n-98w. T.D. 3,481 ft.; recmtd. cave 60 sacks.

Lincoln County

Senrab Oil Corp. No. 3 Govt., CSL SE NW sec. 10-26n-113w. S.D. 1,020 ft.
Texas Co. No. 2-D Govt., N SW NW sec. 10-26-113. Drlg. 260 ft.

Niobrara County

Continental Oil Co. No. 4 Joss, 90 feet west of C SW NE section 6-35-65, proved to be the biggest well so far completed in the lower Sundance in the Lance Creek field, with the possible exception of Ohio Oil Co. No. 5 Converse Sheep, the mystery well. It is an east offset to J. M. Huber Corp. No. 1 Joss, the farthest west of any Sundance sand well in the field. The Huber well had good saturation, but encountered prolonged trouble in shutting off water and turned out to be a comparatively small pumper. Continental No. 4 Joss was completed at 3,919 feet and made 1,178 bbls. of oil and 1,045,000 feet of gas in the first 14 hours. It was then worked over and on a final test it made 312 bbls. an hour, or at the rate of 7,488 bbls. a day, with 9,000,000 feet of gas. It was not tested for 24 hours. The lower Sun-

dance was at 3,841-95 feet. The elevation is 4,405 feet.

Argo Oil Co. No. 7 Elliott, C NE NW section 5-35-65, which was reported a completion, but not tested, a month ago at 4,009 feet, total depth, is pumping an average of 10 bbls. an hour.

Continental Oil Co. No. 1-B Schuricht, C NW SE sec. 6-35n-6w. Drlg. 2,525 ft.
Continental Oil Co. No. 2 Apex-3, C SE NW sec. 34-36n-65w. Cg. 3,552 ft.; sat. in Lakota at 3,550 ft.
Continental Oil Co. No. 3 Schuricht, C SW NW sec. 5-35-65w. Bldg. rig.
Lewis Gokel No. 1, NE SE NW sec. 31-35n-62w. Drlg. 678 ft.
MacKinnie Oil & Drlg. Co. No. 1 Thompson, NE NW NE sec. 7-35n-65w. Drlg. 1,384 ft.
Ohio Oil Co. No. 8 Lamb, C SW NE sec. 5-35n-65w. Spdg. 406 ft.; drlg. 3,671 ft. in sh.
Ohio Oil Co. No. 5 Converse Sheep, C SE SW sec. 32-36n-65w. S.D. below 4,600 ft.; believed to have cored top of Tensleep.
Ohio Oil Co. No. 5 Putnam, C NW SW sec. 33-36-65w. Rig.
Chester Oil Co. No. 1 fee, NE NE NE sec. 14-39n-61. Drlg. 183 ft.; (formerly Wickersham & Kyle).
S. & H. Dev. Co. No. 1-A Olinger, SW NE sec. 1-36n-63. T.D. 1,700 ft. in Fuson sh.; pulled 4½-in. to rm. to bottom.

Park County

Resolute Oil Co. No. 1 State, C NW SW sec. 16-57n-101w. M.I.M. and R.U. to resume at 3,608 ft.

Sheridan County

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55n-85w. Drlg. 3,090 ft.

Sublet County

Wright & Lackey No. 1 Haddenham, SE NW SW sec. 21-28n-113w. (Dry Piney); R.U. Fort Worth spudder.

Sweetwater County

General Petroleum Corp. of California, which reentered the Rocky Mountain area several months ago when it took over the Overland dome operation in Carbon County, has acquired 100,000 acres in the Red Desert country in Sweetwater County west of the Lost Soldier field to Buffalo Basin. A geophysical survey of the area will start shortly with a crew of 20 men. Some testing has been done in the past in the Red Desert country where shows of oil and gas were encountered in the Frontier, but these wells were located on surface geology before the seismograph had revealed its possibilities. The crew also will shoot the Gooseberry dome leases in Park County.

Mountain Fuel Supply Co. No. 1 Nightingale, C SW NE sec. 32-16n-104w. Drlg. 825 ft. in sh.

Uinta County

Badger Basin Oil Co. No. 1-B, NW NW SW sec. 10-14n-118. Drlg. 1,060 ft.

Washakie County

Arlton & Doyle No. 1 Govt., SW SW SE sec. 29-48n-91. Resumed at 900 ft. (cor.); drlg. 984 ft.
Wyoming O. & R. Co. No. 2 Govt., NW SW SW sec. 31-48n-90w. T.D. 1,404 ft.; fsg. tools.
Wyoming O. & R. Co. No. 1 Frison, NW SW NW sec. 14-48n-91. T.D. 1,700 ft.; P.B. to 1,410 ft. to str.; drlg. 2,100 ft.

Weston County

Conway Oil Corp. No. 1 Government, C SE NW section 7-41-60, in the Dewey district, which spudded in the summer of 1934 for a test of the Madison lime, has a good showing for a producer in what may correlate with the Tensleep or Amsden, above the Madison. It cemented the 3½-inch at 2,304 feet and drilled plug and went into sand to 2,306 feet. It filled with approximately 15 bbls. of black oil in 24 hours. It is slowly drilling ahead, but on account of the hard formation and reduced size of the hole, progress is slow. The formation in which the oil was found shows about 65 per cent lime and 35 per cent sand. The Minnelusa was topped at 1,720 feet. It had water in the Dakota at 335 feet and enormous artesian flow in the Lakota at 425-45 feet.

A completion, also a first report, in the Osage field is Albert Jones No. 12 Government, C SW NE section 21-46-63, for 4 bbls. on the pump from sand at 420-24 feet.

Conway Oil Corp. No. 1 Govt., C SE NW sec. 7-41n-60w. Drlg. 2,306 ft. in saturated l. and sd.
Chas. Stough No. 1 Govt., SW SW SW sec. 22-47n-63w. Drlg. 200 ft.
Beaver Creek Oil Synd. No. 1 State, C NE NE sec. 23-44n-63w. R.U. and ready to spud; W.O. wtr.
Harkins et al No. 2, NE SW NW sec. 31-46n-63w. Loc.

MONTANA

The action last week of the Toronto Pipe Line Co. in slashing the posted price of Cut Bank crude from $1.50 to $1.35 per barrel, thereby precipitating a cut by other companies in the northern Montana fields, came not only as a surprise, but as a disturbing factor in the market situation. Several protest meetings of operators were held in Great Falls and the concensus of opinion was that the reduction was not justified by conditions. About 85 per cent of Cut Bank crude is exported to Canada and the numerous small operators who already are hit financially by the necessity of drilling offset wells to meet lease requirements, did not hestitate to express resentment at their market being upset.

The Texas Co. is the only major oil company operating extensively in Cut Bank. The other producers find themselves at times hard pressed to finance the drilling of required offsets and frequently make deals with contractors to drill for an interest. They manage to keep going fairly well when they receive a favorable price for their crude, but the cut in price has put them at a disadvantage.

Officials of the Texas Co. were engaged at the time of the reduction, in cooperation with other producers, in a movement to stabilize market conditions. These interests were making favorable progress. Approximately 145 wells are required for 1936 to meet lease requirements. This compares with 90 drilled last year. The increase is due in part to the sale last fall by the government of a number of leases on Indian tracts in the southern part of the field with a minimum requirement of two wells to the tract each year. These wells would bring in approximately 6,000 to 7,000 bbls. a day of new settled production. The situation for 1936 was somewhat affected by the bringing in of the Santa Rita Oil & Gas Co. No. 1 Lander, the record well for the field, with an output equal to the settled production of 40 or more new wells.

H. A. Stewart, manager of the producing department of the Texas Co. for the Rocky Mountain area, was working in cooperation with other producers toward adjusting the situation for 1936 by reducing the number of required wells. He had been in Montana several weeks and his company by buying extensions had reduced its number of wells to be drilled this year from 50 to 25.

Big Horn County

Daniels Petroleum Co. No. 1 May, C SE SE section 13-1s-33, a deep test in the Hardin field, which produces some gas at shallow depths, has approximately 20,000 bbls. of water per day from sand at 3,333-87 feet in the top of the red beds. It may be saved as a water well for irrigation purposes.

Carbon County

Bailey-Round Butte Oil Co. No. 1, NW NE SE sec. 3-6s-23. T.D. 1,551 ft.; redrlg. 1,483 ft.

Daniels County

Whitetail O. & G. Co. No. 1, NW NE NW sec. 10-36n-50e. O.W.D.D.; drlg. 1,865 ft.

Fallon County

Montana-Dakota Utilities Co. No. 1 Unit, NE NE NW sec. 17-4n-62e. T.D. 6,797 ft.; P.B. to 6,767 ft.; W.O.C.

Fergus County

Minnesota Co. No. 1 Fenholt, SE NW SW sec. 24-21n-18e. S.D. 1,100 ft.; tools still in hole.
Judith Operating Co. No. 2 Govt., NW NE sec. 35-22n-17e. Drlg. 1,475 ft.; gas and wtr. in sd. at 1,002-1,150 ft.
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 20-21-18e. Drlg. 576 ft.

Glacier County

Three wells were completed and five new operations were reported in the Cut Bank field.

The best completion, which also is an outpost well, is Wilkinson and others No. 1 Tribal-126, C NE NW section 7-32-5w, in the southern part of the field on one of the Indian tracts sold by the government last fall. It was completed at 2,870 feet and swabbed 250 bbls. first 22 hours from the pay at 2,827-68 feet. The elevation is 3,611 feet. The Sunburst was at 2,790-2,805 feet and a show of oil was encountered at 2,803 feet. The location is half a mile west of the nearest producer.

Consolidated Gas Co. No. 1 All.-114, S NE SW section 31-33-5w, swabbed 80 bbls. first 24 hours at a total depth of 2,849 feet. It was then shot with 10 and 40 quarts and is cleaning out. The Sunburst was at 2,754-70 feet, with a show of oil at 2,755 feet, and the Cut Bank pay at 2,827-40 feet.

Santa Rita Oil & Gas Co. No. 2 Government, NW SW NW section 31-33-5w, has 1,400 feet of oil in the hole at a total depth of 2,835 feet and will shoot. The Sunburst at 2,715-60 feet was dry. The Cut Bank pay was at 2,790-2,813 feet.

Cobb-Pardee No. 1 Stufft, C SE NW sec. 25-36n-6w. Drlg. 3,063 ft.; top Ellis 3,053 ft.
Cobb-Pardee No. 2 Morrison, CEL NE SE sec. 24-33n-6w. Rig.
Cobb-Pardee No. 1 All.-115, C SE SE sec. 31-33n-5w. Cellar; (first report).
Consolidated Gas Co. No. 2 All.-114, C SE SW sec. 31-33n-5w. Loc.; (first report).
A. E. Crumley No. 2 Allotted-113, SW NW SE sec. 31-33n-5w. Drlg. 1,725 ft.
Hannah-Porter Co. No 1 Allotted-130, C Lot 3, sec. 6-32n-5. Drlg. 2,275 ft.
B. V. Hole No. 1 Tribal, C NW SW sec. 36-33n-6w. M. on loc.
B. V. Hole No. 1 Allotted-124, 640 ft. out of NE cor. sec. 1-32-6w. Spdg.
Kincheloe-Hanlon No. 2 State, NE NE NE sec. 36-33n-6w. Drlg. 2,405 ft.
Kately No. 4 Drumheller-Ward, SE NE NE sec. 10-34n-6w. Drlg. 2,715 ft.
Manning & Marshall No. 3 Tribal-120, 760 ft. SN, 660 ft. WE, Lot 8 (NW NE), sec. 7-32n-5w. Drlg. 1,975 ft.
Montana Headlight Oil Co. No. 6 Yunck, C SW NW sec. 1-34n-6w. Drlg. 375 ft.
Montana Power Gas Co. No. 1 Winkler, C SE SE sec. 28-33-5w. Drlg. 475 ft.
Montana Power Gas Co. No. 1 Lagabeer Unit, SE SE NW sec. 17-35n-5w. Drlg. 2,005 ft.
Montana Power Gas Co. No. 4 Seeba, SW SW NW sec. 2-34-6w. Cmtd. 7-in. at 2,858 ft.; W.O.C.
Montana Power Gas Co. No. 1 Mueller, C SE SE sec. 7-33n-5w. Cmtd. 10-in. 568 ft.; Colo. 553 ft.
Nadeau Bros. No. 1 Ewald, C NE SW sec. 9-32n-5w. Rig.
Par Oil Co. No. 7 Haines, NW SW SW sec. 2-34n-6w. Drlg. 1,930 ft.
Neil Spencer No. 2 Tweedy, 925 ft. NS line, 1,980 ft. W line, SE sec. 25-33n-6w. Drlg. 2,905 ft.
H. R. Patterson No. 1 Miller, C NE NE sec. 1-33n-6w. Drlg. 2,155 ft.
Stanley Gray No. 1 Allotted-132, NW SE NW sec. 22-34-7w. Drlg. 3,340 ft.
Jack Marshall No. 1 Allotted-119, C SE SW sec. 1-32n-6w. Spdg. 80 ft.
Steele Creek Prod. Co. No. 1 Tarrant, C NW SW sec. 19-34n-5w. Spdg. 325 ft. (formerly R. C. Tarrant No. 1 Hope).
R. C. Tarrant No. 1 Sherburne, E NE SE sec. 4-32n-6w. Bldg. rig (first report).
R. C. Tarrant No. 6 Getty, SE NE SW sec. 2-34n-6w. Drlg. 1,375 ft.
Texas Co. No. 1 Govt., C SW NE sec. 17-32n-5w. Drlg. 1,910 ft.
Texas Co. No. 2, Unit 9, C SW NE sec. 9-32n-5w. T.D. 3,115 ft.; 700 ft. salt

(Continued on Page 114)

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Eastern Field Report

By STAFF CORRESPONDENT

INTEREST STILL CENTERS ON WEST VIRGINIA DEEP TESTS

PITTSBURGH, Pa., June 22.—Deep tests in West Virginia, now rather numerous, still hold interest with successful completions. One new test in Lincoln County, while not a commercial success, is interesting in view of gas being found in the Oriskany sand, remote from the present gas field, and also because it is not located on a large and definite structure.

In Washington district, Lincoln County, Harvard Gas Co. drilled on the Lincoln Mineral lease to 4,534 feet. The test is about 16 miles southwest of Charleston and 1 mile northeast of MacCorkle. It is east of the Branchtown Syncline. It tests about 184,000 feet of gas a day from the Oriskany and Shale.

Oriskany sand lay at 4,436-4,450 feet; show of oil at 4,378 feet, and gas at 4,446 feet. After this depth, there were alternate lime and sand deposits, characteristic as the structure thins out. There was lime at 4,450-4,490 feet and sand at 4,490-4,523 feet.

In Elk district, Kanawha County, an interesting test was completed by Columbian Carbon Co. on the W. H. Paxter and others farm at a total depth of 4,782 feet, or through Oriskany sand. It had a volume of 134,000 feet a day at 4,739 feet, which after a shot increased to 893,000 feet a day. The lease is about 1 mile north of the M. M. Robertson farm and southwest of good gas wells on the G. and D. Copenhaver farm.

In Malden district, Kanawha County, Godfrey L. Cabot, Inc., completed No. 9 Campbells Creek Coal Co. lease in the Oriskany sand. It has a volume of over 2,000,000 feet of gas per day before shot. The No. 10 on this farm is drilling out the cement after casing at 4,695 feet and should be completed within the week. The No. 9 is on Spring Creek one-half mile northeast of the No. 8, the original gas well.

In Loudin district, Kanawha County, Owens Illinois Glass Co. drilled through Oriskany sand in No. 2 L. A. Christy, which had been a gas well in the Berea sand and was drilled down. It is a small gas well, gauging 77,000 feet a day. It will be shot.

In this district, the Columbian Carbon Co. made a location on the Kanawha City Co. lease on Cane Fork of Davis Creek. So far, Loudin district has been very spotty.

In Malden district, Kanawha County, the Columbian Carbon Co. made a location on the W. D. Lewis tract, their No. 15, on Spring Fork of Campbells Creek. It is 2,100 feet west, south 70 degrees of the first deep test.

New work spudded in during the week in the Oriskany gas field include the United Fuel Gas Co. No. 4,643 and 4,657 on the George Creek Land & Mining Co. in Malden district; Columbian Carbon Co. test on the Kanawha Valley Bank (Grant Copenhaver 121 acres) lease in Elk district; Sandy Elk Oil & Gas Co. on the Perry Moles heirs farm. At present in the Oriskany gas field of Elk, Malden, Loudin, Poca and Big Sandy districts, 21 wells are drilling, 5 rigs are standing and work is progressing at 10 locations.

SOUTHEAST OHIO

The deep test of the Natural Gas Co. of West Virginia on the Strudthoff farm, SE cor. section 31, Madison Township, Columbiana County, in Southeast Ohio, was not completed as the tools have not been recovered from within 10 feet of the Oriskany sand.

One mile north of the Jenkins gas well in this county, same company is drilling through the Berea sand on the Albert Ketchum farm. In section 25, Wayne Township, the same company is spudding in a deep test on the William Grafton farm. Another location has been made and a rig is being hauled into this area.

In Athens County, the Ohio Fuel Gas Co. drilled No. 6,135 Sunday Creek Coal Co. lease, in the SE quarter of section 29, Dover Township, through Clinton sand to 3,730 feet. It had only a small showing of gas and will be abandoned.

In Belmont County, in the NW quarter of section 26, Richland Township, Bee Whitis and others drilled deeper in No. 2 Freiberg & Honsa from the top of the Berea sand where it had been a gas well through the sand to 1,845 feet. It was dry.

In Coshocton County, the Preston Oil Co. drilled No. 3 A. J. and B. W. Beatty in New Castle Township, through the Clinton sand to a depth of 3,270 feet and it was also a dry hole.

In Guernsey County, the Preston Oil Co. and others completed a test on the Simon Lent farm in the NW quarter of section 10, Millwood Township, in the Berea Grit at a depth of 1,427 feet. It had only a small showing of oil and may make a 1-bbl. pumper after a shot.

In Holmes County, Ohio Fuel Gas Co. completed a test on the H. M. Tidball farm, Lot 1, Monroe Township, in the Clinton sand as a gas well at 3,389 feet. It gauges 1,000,000 feet a day with no showing of oil.

In Knox County, D. C. Highman and others drilled a dry hole on the Roy Kidwell farm in section 22, Clay Township. It passed through Berea sand to 1,400 feet.

In Licking County, E. J. Edmonds completed a 2-bbl. pumper on the W. P. Hoskinson farm, Lot 3, Franklin Township, in the Berea sand at 758 feet.

In Muskingum County, the Ohio Fuel Gas Co. abandoned a failure on the F. Herbert and Nellie Skinner farm, Third quarter Range 7, Madison Township. It went through the Clinton sand to a depth of 3,700 feet.

In Noble County, Dana Bean and others completed a second test on the S. C. Turner estate in the NW quarter of section 8, Jefferson Township, in the Macksburg "700-Foot" sand at 852 feet and after a shot shows for a barrel a day.

In Perry County, C. L. Bullock and others completed No. 5 T. and M. Monahan farm, section 33, Pleasant Township, in the Berea sand at 1,050 feet. It produced 5 bbls. the first day after shot. In section 32, same township, Allegheny Oil Co. completed No. 3 W. C. Longstreth as a 3-bbl. pumper in the Berea sand at 1,124 feet after shot.

In Washington County, David Ripley completed No. 2 David Ripley in section 32, Aurelius Township, in the Buell Run sand at 315 feet. It produced 2 bbls. the first day after shot. In section 25, Ludlow Township, W. S. Lauffer completed No. 8 William Day in the Injun sand at 1,324 feet. After a shot, it produced 2 bbls. the first day and had a volume of 10,000 feet of gas.

One mile west of Layman, Fraction 2, Fairfield Township, Washington County, Williams Brothers completed a gas well on the E. R. Board farm in the Brill sand at 1,152½ feet. It gauged 300,000 feet a day. One-half mile south of Dunbar in section 12, Fairfield Township, Bailey Oil & Gas Co. drilled failure on the Richard Graham farm through the Injun sand to 1,310 feet. In Decatur Township, Ohio Fuel Gas Co. on the Owen S. Knox farm, south of Cutler in section 5, drilled through First Berea sand to 1,883 feet. It was dry.

SOUTHWEST PENNSYLVANIA

Another fair producer was completed in the Fifth sand streak in Amwell Township, Washington County, Pennsylvania. Here, the South Penn Oil Co. drilled in their test on the Hazel M. Seese farm about 2,900 feet and it flowed 50 bbls. over night. It is being deepened to reach the second pay. The total depth of the company's test on the Anna A. Lowery farm was 2,981 feet. The Fourth sand was at 2,913-2,917 feet and the Fifth sand at 2,972 feet with oil showing at 2,979 feet. It is now being shot with the hole standing full of oil to act as a tamp.

In the same township, South Penn Oil Co. is building the rig on the Piedmont Coal Co. tract. The New Oil & Gas Co. is down 2,600 feet in No. 2 Anna Chamber Phelan and has rig on the Hatfield farm completed and is building one on the Bronder farm.

In Franklin Township, Greene County, the Waynesburg Home Gas Co. completed deepening the well on the W. F. Guthrie farm. The total depth was 2,902 feet. The Bayard sand was at 2,815 feet with gas showing at 2,817 feet. The Bayard Stray sand was at 2,833 feet. The total gas volume was 65,000 feet a day.

In South Franklin Township, Washington County, William Bungard reached the Little Dunkard sand in the test on the Flora Clark farm at 856 feet. There was a show of oil at 894-906 feet and the bottom was 928 feet. The Carnegie Natural Gas Co. is drilling at 2,512 feet in the test on the Belle A. Jones farm. The top of the Gantz sand was at 2,494 feet.

In East Finley Township, the Natural Gas Co. of West Virginia is down 2,963 feet on the J. R. and Lillian Day farm. The Union Gasoline & Oil Corp. has reached 500 feet in the No. 5 on the J. N. Clutter farm. The Duquesne Gas Co. spudded in the No. 3 on the M. B. Rogers farm.

Deep Tests

The deep test of Norwood Johnston and others on the James McBurney farm in Pleasant Township, Washington County, is drilling at 4,800 feet and making rapid progress. It has about 2,000 feet to go to reach the lower Devonian. The test of William Snee and others on the Summit Hotel property in South Union Township, Fayette County, is still in trouble with caving reaching the bottom of the hole, 6,300 feet.

WEST VIRGINIA

Three small producers were completed in West Virginia during the week, but production was aided by reconditioning a number of wells. In Pleasants County, Howard McAtee and O. J. Gabbert completed No. 5 Howard Naish in Grant district in the First Salt sand at 585 feet. It will make a half-barrel pumper.

In Ritchie County, the C & H Oil Co. completed a small well on the Albert Pyles farm in Murphy district in the Maxon sand at a depth of 1,540 feet.

In Wetzel County, J. G. Cochran & Co. completed No. 7 Stephenson and Mary Main farm, in Church district, in the Maxon sand at 2,140 feet. It is good for 5 bbls. a day along with about 240,000 feet of gas a day.

In Calhoun County, Hope Construction & Refining Co. shot and cleaned out No. 3 R. G. Linn, in Sherman district, and increased production from 1 bbl. a day to 12 bbls. a day. In Gilmer County, the C. & H. Oil Co. cleaned out the No. 1 on the Harold Wilt farm and increased pro-

(Continued on Page 124)

West and North Texas

By
L. E. BREDBERG

SITTING ON GAINES COUNTY TEST; EXTEND HURDLE POOL

FORT WORTH, Tex., June 22.—The Hurdle pool in Upton County was extended another 1½ miles southeast, and all eyes in the Permian Basin, West Texas, are now riveted on Landreth Production Co. No. 1 W. H. Kirk, in section 22, Block A-21, P.S.L. Survey, southern Gaines County. Opinion is divided as to whether or not the latter test will make a producer, and when it is tested on June 23, other operators will have men sitting on the well to watch for results. The test cored considerable saturated lime, but it is low in porosity. Cores have been taken from 4,702 feet to the bottom of the hole, and 7-inch casing was set and cemented at 4,350 feet with a string of tubing run in the hole preparatory to testing.

Its location, on a trend between the Means field in northern Andrews County, 9 miles to the south, and a gas discovery about the same distance to the northwest, enhance the chances for this test making a producer, the logging of saturated streaks adding to promises for production. If it proves a producer, at least three tests will be started on offset acreage at once, with other tests scheduled for the area in the near future. Two Oklahoma operators have already applied for permits to drill on town lots in Seminole, the county seat, about 9 miles to the northeast, and the entire county will receive more attention within the next few months if an oil discovery is made in this test.

In case the test does not prove a producer at the present depth, it may be carried deeper as it still has plenty of depth to drill before logging salt water, which is believed to be at least 250 feet deeper. Proving no producer in deeper drilling, it will probably be plugged back and the heavier saturated streaks of lime acidized.

Upton County

A southeastern extension of the Hurdle pool, Upton County, of a mile and a half, and the possible extension of the Cordova Union Pool, comparatively new producing area to the southeast of the McCamey pool, in the same county, opened up more producing area in Upton County this week.

George E. Farley and others No. 1 A. M. Mayhew, in section 8, G.C.& S.F. Survey, about 1¼ miles southeast of the Cordova Union pool went into sulfur water at 2,357-65 feet, but it is believed that by plugging back this water can be shut off and a producer made, which will mark another extension to the pool. Elevation is 2,719 feet.

Brewer and Smith No. 1 Cordova Union, located in the southeast corner of the NW¼ of section 19, Block 1, M.K.&T. Survey, north of Hurdle, has either extended the producing area or opened another lime pool in this part of Upton County, as it is located about 1½ miles east of the nearest production in the area. It was given a 2,000-gallon acid dose at 2,072 feet and pumped nearly 350 bbls. of oil per day following the treatment of the lime.

George A. McCamey, Fort Worth operator, has moved in a machine to drill an east offset location to the test and the two successful operators have staked location in section 2, A. E. Baxley Survey, over a half mile to the south, for another test in the area.

The new production found in the old producing McCamey field in Upton County, mainly as a result of treating the lime with acid, and the new extensions made to the McCamey, Sherk and Hurdle areas and the new pool opened to the southeast of the McCamey production by W. Ray of San Angelo and others, is exceptionally interesting due to the fact that this area, like many others in past years, laid idle for a long period of time, companies and operators ignoring it, probably thinking it had few if any more producing possibilities, while they looked for flush production in wildcat and other areas. It is another good example of an old area staging a come back as a result of successful acid treating, which has resulted in the production of many millions of barrels of oil which otherwise would have staid in the ground, possibly forever. The area is one of the oldest Permian lime producing fields in the district, having been discovered in September, 1925.

Pipe Line Connection

The recently opened new producing area about 4½ miles northwest of the Goldsmith field in western Ector County, discovered by William H. Dunning, Jr., on the Cummins ranch, is to receive a 4-inch pipe line connection, which will be laid by the Gulf Oil Corp. pipe line division from its Goldsmith discovery to this new well and area, in which one other test is now drilling. Construction work has already been started on the line and other tests are expected to be spudded soon in the new area as a result of this outlet. The discovery is in section 33, Block 45, Township 1n, T.&P. Survey.

The 1-mile northwest extension to the Foster or Odessa pool in eastern Ector County was completed this week, rated as a 475-bbl. well after plugging back from 4,456 feet to 4,135 feet to shut off water and complete. It topped the pay several weeks ago at a total depth of 4,028 feet, but has been drilling deeper in an effort to pick up heavier saturation and make a better well. It was shot with 345 quarts of nitro from 4,020-4,135 feet prior to completing. It was tested, flowing through open casing. Location is in section 14, Block 43, Township 2s, T.&P. Survey. Stanolind Oil & Gas Co. drilled the well.

Proration Change

The West Texas district was curtailed by the Railroad Commission this week from 157,710 bbls. per day, as of June 15, to 150,179 bbls. per day, effective June 20.

Increase From Acid

Tide Water Oil Co. and Merry Brothers & Perini No. 3 Howard, in the three-well pool northeast of Rotan, in Fisher County, located in section 180, Block 2, H.&T.C. Survey, which has been flowing only 12 bbls. per day naturally from plugged-back depth of 3,690 feet, was given a nitroglycerin shot and increased to 25 bbls. per day, has been treated twice with 2,000 gallons of acid at each treatment, flowing 200 bbls. per day after the first 2,000-gallon treatment and increasing to 15 bbls. of oil per hour after acidizing with another 2,000 gallons. The other two wells in the field, owned by the same company and operators, will no doubt be acidized in an effort to step up production. The wells have a connection and outlet to the Shell Pipe Line Co. main carrier in the area. The pool is about a year old, being located on a structure mapped by Bud Perini, geologist of the latter firm.

Suggested Change in Yates

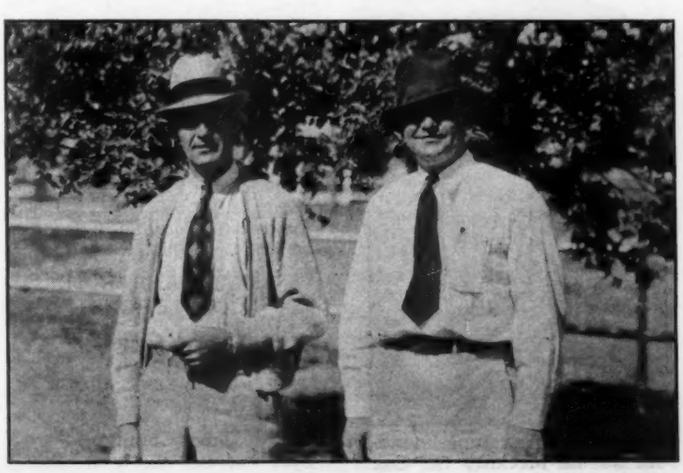
The prolific shallow Yates field, in eastern Pecos County, is one of the fields in Texas holding the stage from legal and proration standpoints. Many legal battles have been fought over land lines and leases in the field, ownerships changing considerably in the field within the past three or four years as a result of such litigation. During the week the acreage-potential method of prorating the field was again heard by the Texas Railroad Commission. The field has been producing under a potential factor method alone, companies holding larger leases in the field seeking an acreage factor, also, with a smaller unit basis to be substituted for the 100-acre units now in use. Argument was held pro and con on the subject, with the commission taking the question under advisement.

Edwards County Test

The Plateau Oil Co., drilling branch of the Peerless Oil & Gas Co., is contemplating the sinking of a 4,750-foot test on the A. G. Morriss block in the northeastern part of Edwards County. Tentative location is in the SW quarter of section 66, Block D, H.E.&W.T. Survey. The Edwards plateau region, in which this block falls, is assuming more importance as companies and independents are reaching out in their search for more new pools.

Jones County Prospect

N. H. Martin and Sons No. 1 Mary and E. B. Spurrier, mentioned in this column last week as a prospective new pool opener 3 miles north of Nugent, in eastern Jones County, failed to make a producer from the Cook sand logged at 1,831 feet, but drilled on down and picked up the Hope sand from 1,921-28 feet and is showing for a producer and discovery from this deeper horizon. About 500 feet of oil rose in the 7-inch hole over night, and rods and tubing were installed preparatory to making a pumping test. It is located about 6



Jack Stearns, division superintendent for Shell Petroleum Corp. in the Texas Panhandle, and Everett Ray, Pampa, Tex., construction superintendent for Bovaird Supply Co.

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miles southwest of the Lueders pool and 2 miles northeast of the Sandy Ridge pool. Location is in the center of the William Walker Survey No. 1.

North Central Texas District

Of main interest in the North Central Texas (Wichita Falls) district this week was the report of preliminary survey made for 30 miles of 6-inch gas line to be laid from the Texas Co.-Les K. Johnson field, on the extreme west edge of Foard County, to carry natural gas from the wells in this field to the West Texas Utilities Co.'s power generating plant at Quanah, to the northwest. The Texas Co. has a casinghead gasoline plant in the pool, which extracts gasoline from the gas from the wells. The residue will be run through the new gas line. The natural gasoline is carried through a short line to the east, where the company has a loading rack on the railroad near Crowell, from which place it is shipped out by tank car. Wells in the field are producing from around 3,500-3,600 feet and have a high rock pressure.

Collins County Deep Test

The Port Bolivar Oil & Royalty Co., which is now drilling below 4,000 feet on a test about 2 miles east of Van Alystine, is now moving in material for a 6,000-foot test one-quarter of a mile east of the town of Anna, in the extreme northern part of Collin County. Same is located on a seismograph and magnetometer high, and about 5 miles south of the company's other Collin County test. Location of this test is on the A. Shirley farm in the Gwynn Morrison Survey.

WEST TEXAS COMPLETIONS

Andrews County

Humble Oil & Refining Co. No. 7 Means, 4,500-4,536 feet, acidized, 726 bbls.

Crane County

Sinclair Prairie Oil Co. No. 1 Tubbs, 4,297-4,469 feet, acidized twice, 210 bbls. first 24 hours and 109 bbls. second 24 hours through 1-inch tubing choke.

Ector County

Jennings No. 1 Blakeney, 4,134-4,225 feet, shot, 469 bbls. Atlantic and Skelly Oil Co. No. 1 Wight, 4,130-4,300 feet, shot, 1,012 bbls. Tide Water Oil Co. No. 1 TXL ranch, 4,126-4,222 feet, shot, 557 bbls. Stanolind Oil & Gas Co. No. 1-B Cowden, 4,028-4,456 feet, plugged back to 4,135 feet, shot, 475 bbls. Gulf Oil Corp. No. 6 Goldsmith, 4,158-4,260 feet, shot and acidized. plugged back to 4,225 feet, 844 bbls. Sun Oil Co. No. 1 Holt, 4,070-4,972 feet, plugged back to 4,138 feet, shot and acidized, 20 bbls. oil and 4 bbls. water per day.

Sam R. Rugeley, superintendent for the McCarty Oil Co., Wichita Falls, who is in charge of a water-flooding project in Wichita County for that company

Crockett County

California Co. No. 7 Shannon, 2,530-2,570 feet, acidized, 448 bbls.

Howard County

Sinclair Prairie Oil Co. No. 39 Dodge estate, 2,410-2,775 feet, shot, 422 bbls. Reed and others No. 1 Pike, dry and abandoned 3,398 feet, elevation 2,514 feet.

Loving County

California Co. No. 7 Allen, 4,282-4,331 feet, shot, 113 bbls.

Pecos County

W. E. Production Co. No. 1 University, dry and abandoned 1,642 feet, elevation 2,527 feet. Cardinal Oil Co. No. 39-E Tippett, 375-516 feet, plugged back to 390 feet, 12 bbls. oil and 12 bbls. water per day. Marathon Oil Co. No. 47-A Yates, 1,095-1,207 feet, 104 bbls. per hour.

Upton County

Hope Petroleum Co. No. 5 Lane, 2,233-2,258 feet, acidized, 400 bbls. Ellis and others No. 4-A Robbins, 2,102-2,161 feet, acidized, 567 bbls. Folvey and Smith No. 1 Reece, 2,105-2,386 feet, acidized, 382 bbls. in nine hours.

Ward County

Choate and others No. 1 Pure-Bennett, 2,348-2,500 feet, shot, 20 bbls. oil and 4 bbls. water. F. H. E. and Atlantic Oil Producing Co. No. 1 Killough, 2,288-2,410 feet, shot, 180 bbls. Leidecker and others No. 2-B Archenhold, 2,542-3,041 feet, shot, 433 bbls. Rio Bravo Oil Co. No. 7 Alcott, 2,308-2,530 feet, shot, 519 bbls. Atlantic Oil Producing Co. No. 23 Johnson, 2,455-2,547 feet, shot, 500 bbls. Turman Oil Co. No. 6 Sloan, 2,412-2,492 feet, shot, 224 bbls. California Co. No. 4 Walling & Costly, 2,292-2,525 feet, shot, 658 bbls. F. H. E. Oil Co. No. 1-B Richter, 2,409-2,570 feet, shot, 919 bbls. Gulf Oil Corp. No. 69 O'Brien, 2,586-2,795 feet, shot, 121 bbls. Richardson Oils, Inc., No. 11 O'Brien, 2,733-3,090 feet, shot, 250 bbls.

Winkler County

Humble Oil & Refining Co. No. 3-A Colby, 2,792-3,015 feet, shot, 767 bbls.; No. 8 Howe, 2,810-2,980 feet, shot, 1,014 bbls. Skelly Oil Co. No. 11 Halley, 2,795-2,888 feet, shot, 219 bbls. Westbrook Oil Corp. No. 4 Hendrick, 2,789-2,992 feet, shot, 462 bbls.

TEXAS PANHANDLE COMPLETIONS

Carson County

Texoma Natural Gas Co. No. 2-T J. J. Crutchfield, 2,380-2,767 feet, 50,-431,000 feet of gas.

Gray County

Dyck Oil Co. No. 3 McConnell, 3,185-3,391 feet, 383 bbls. pumping. Gulf Oil Corp. No. 14 Thompson, 3,216-3,280 feet, 277 bbls. pumping, shot. Kewanee Oil & Gas Co. No. 20

McKISSICK

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The McKissick Ball Bearing Universal Swivel Becket gives a compact and simple combination arrangement of block and swivel tubing hook.

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(Blue Label) for service in wells to approximately 2,000 feet in depth.

DARFLEX
(Green Label) the popular favorite for wells to 800 feet in depth.

Manufactured Only By

DARLING VALVE & MFG. CO.

Williamsport, Pa.

Smith, 3,155-3,250 feet, 729 bbls. pumping, shot. Texas Co. No. 3 C. S. Barrett, 3,175-3,240 feet, 450 bbls. pumping, shot.

Hutchinson County

Holmes-Hill and Holmes No. 1 J. J. Perkins, total depth 2,956 feet, dry and abandoned. Stanolind Oil & Gas Co. No. 6 Pitcher "B," 3,028-3,115 feet, 434 bbls. pumping, shot; No. 9 Ware "C," 3,015-3,100 feet, 480 bbls. pumping, shot.

Moore County

Anderson and Kerr No. 1 Strunk, 2,878-3,566 feet, plugged back to 3,295 feet, 66,593,000 feet of gas. Shamrock Oil & Gas Co. No. 1 C. R. Jones, 3,406-3,416 feet, plugged back to 3,410 feet, 48 bbls. oil and 20 bbls. water.

Wheeler County

Lone Star Gas Co. No. 1 W. Farren, 2,068-2,448 feet, 32,900,000 feet of gas. Palmer and others No. 1 C. Smith, 1,970-1,985 feet, 72,670,000 feet of gas. Skelly Oil Co. No. 19 Johnson, 2,475-2,525 feet, 270 bbls. pumping.

NORTH TEXAS COMPLETONS

Archer County

L. T. Burns No. 2 G. D. Prideaux, 792 feet, dry. Cato Oil Co. No. 3 J. H. Turbeville, 1,070 feet, dry. Consolidated Oil Co. No. 1 Portwood CC, 1,432-1,437 feet, 75 bbls. Deep Oil Development Co. and others No. 15 L. F. Wilson A, 2,212-2,228 feet, 1,000 bbls. Deep Oil Development Co. and Primrose Refining Co. No. 1 Wilson, 2,226-2,238 feet, 400 bbls. S. H. Huggins and others No. 13 Henry Ford, 993-1,003 feet, 10 bbls. Regal Oil Co. No. 1 Wilson B, 874-899 feet, 20 bbls. E. J. Stump and others No. 8 L. F. Wilson, 1,513-1,523 feet, 35 bbls.

Baylor County

W. P. Morris and others No. 1 C. T. Porter, 1,337 feet, dry. Morris & Spoonts No. 1 Parker, 25 feet, temporarily abandoned.

Clay County

Diamond C Oil Co. No. 1 Luther Wright, 846 feet, dry. W. H. Kerbow No. 1 Fred Wines, 1,106 feet, dry.

Cooke County

F. W. Merrick, Inc., No. 1 L. K. Bell, 2,325 feet, dry; No. 13 J. W. Hess, 1,298-1,304 feet, 5 bbls. Mills & Carey No. 1-A Bezner, 579 ft., junked. Seitz, Comegys & Seitz No. 10 Trew A, 1,030-1,170 feet, 384 bbls.; No. 11 Trew A, 1,060-1,248 feet, 204 bbls.; No. 12 Trew A, 1,183-1,224 feet, 166 bbls. B. F. Thompson No. 1 Frank Turbenbach, 710 feet, dry. Vindicator Oil Co. No. 6 J. Walterscheid, 776-798 feet, 24 bbls.

Jack County

Engineers Oil Co. No. 1 M. B. Cooke, 2,950-2,962 feet, 225 bbls. W. H. Hammon and others No. 1 F. H. Rhodes, 2,433-2,449 feet, 30 bbls. Panhandle Refining Co. No. 1 G. P. Klinglesmith, 3,300 feet, dry. J. S. Yell No. 1 Smith, 300-306 feet, 4 bbls.

Montague County

Lesh & McCall No. 5 R. W. Cunningham and others A, 942-955½ feet, 44 bbls. Texas Co. No. 7 W. W. Jones, 798-807 feet, total depth 1,784 feet, 99 bbls.

Throckmorton County

J. I. Campbell No. 1 R. D. Daws, 411 feet, dry. L. A. Warren No. 5 J. O. Saunders, 778 feet, dry.

Wichita County

Bridges & Kent No. 1 F. P. Warren, 224-227 feet, 10 bbls. L. T. Burns No. 12 Waggoner Brothers, 1,543 feet, dry. Texas Co. No. 64 W. B. Honaker, 1,058-1,068 feet, 4 bbls.

Wilbarger County

Fain-McGaha No. 12 Waggoner Y, 2,414 feet, dry. F. C. Lain and others No. 1 Allison, 3,511 feet, dry. Lido Oil Co. No. 11 Waggoner, 2,725-2,728 feet, 28 bbls. Regal Oil Co. No. 1 Waggoner, 1,500 feet, dry.

Young County

Paul Atchley No. 3 Benson A, 938-948 feet, 15 bbls. J. P. Doss No. 1 G. P. Stewart, 571 feet, dry. Leon Gaines No. 2 Jeffery, 847 feet, dry. G. C. Gilmore No. 2 Prido, 491-515 feet, 7 bbls. Hurley and others No. 1 Webb, 622 feet, dry. A. C. Parks No. 1 Bavousett and others, 625 feet, dry. Petroleum Production Co. No. 1 C. E. Luton, 668-671 feet, 35 bbls. Solo Oil Co. No. 10 O. B. Stowe, 1,094 feet, dry. Texas Co. No. 5 Belknap, 672-675 feet, 79 bbls.

Canadian Fields

(Continued from Page 104)

No. 3, SW Lot 23, Concession 11, Dereham Township, finished in the Guelph-Niagara formation at 910 feet with around 1,200,000 feet open flow. Location is west of Treleaven No. 1, in the same lot, which had a production of 700,000 feet a day. East of the producing field, Dexter Oil Co. No. 1 Childs, Lot 21, Concession 12, finished in the Clinton sand around 1,325 feet with about 2,000 feet a day and is being abandoned. This is the first test in the field to be deepened to the Clinton, five other wells all getting production in the Guelph-Niagara just below 900 feet. Basil Sunday, drilling on the Armand Smith farm, Lot 22, Concession 12, is below 500 feet.

In Brant County, P. L. Jackson of Dunnville is moving an outfit to drill a 700-foot shallow test for Toronto interests near Scotland, south of Brantford. Ajax Oil & Gas Co. will drill a series of six shallow tests for gas on the Six Nations Indian Reserve near Brantford.

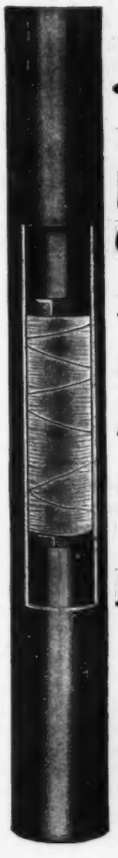
In the Dawn field, Lambton County, Perdue Syndicate No. 1, Barnes farm, Lot 25, Concession 7, Dawn Township, encountered a gas flow estimated 1,500,000 feet a day, at 1,600 feet. The well is being finished at this depth and the outfit dismantled to move to a new location. Drilling was handled by H. H. Stubble of Chatham. Petroleum Products Syndicate of Chatham, a Gubb & Russell organization, is starting No. 3 test on the Weese farm, Lot 22, Concession 3, Dawn Township. Stover & Rawlings of Chatham have the contract. The Union Gas Co. has leased the Len Tyler farm, Concession 11, Dawn Township, south of Oakdale, and is moving in an outfit.

In Kent County, F. W. Burchell No. 1, Lot 151, Talbot Road, Raleigh Township, west of the D'Clute field, is drilling close to the gas horizon at 1,300 feet, and will finish inside a week.

John M. Abrams, California independent operator, recently flew from Los Angeles to Butler, Pa., to attend a celebration honoring the eightieth birthday of his father, E. E. Abrams.

THE LAYNE

RATCHET PACKER



Does not need **FINGERS OR SLIPS** *to prevent creeping up in the casing when exposed to* **HIGH PRESSURE**

IT GIVES A 20" PACK OF ALMOST IRON HARDNESS

The LAYNE & BOWLER CO.

HOUSTON · TEXAS

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, June 22. — Oil wells of good production in the Kentucky and Indiana fields, and gas wells in the Lima and Central Ohio fields together with dry holes summed up the results in the Central West in the past week's review. Illinois is very quiet, only 10 wells having been completed in that state thus far this year.

LIMA FIELD

In Hardin County, Waltermire & Co. No. 1 J. H. Ziegler, section 18, Pleasant Township, is a gas well, at a depth of 1,334 feet, and the Kenton Oil & Gas Co. No. 2, on the F. E. Hamilton farm, section 17, same county, is a gas well at a depth of 1,353 feet.

In the Tiffin field, the Industrial Gas Co. No. 5 on the Frank Sherger farm, on Lot 52, Liberty Township, Seneca County, which is a gas well at 500 feet, and Harpster and others No. 1 on the M. Sendelberg farm, section 4, is a gas well at a depth of 505 feet.

In Wyandot County, Salem Township, Kenova Oil & Gas Co. No. 1 E. and T. Horn, section 18, was a dry hole at a depth of 1,531 feet.

CENTRAL OHIO

In Wayne County, the Ohio Fuel Gas Co. No. 1, on the Grant Alleman farm, section 11, Clinton Township, is a gas well at a depth of 3,251 feet. Same company's No. 1 Noah Hockenberry, section 31, Chester Township, is a gas well at a total depth of 3,007 feet.

In Ashland County, the Ohio Fuel Gas Co. No. 1 Leo E. Koons, Lot 51, Sullivan Township, brought in a gas well at a depth of 2,610 feet. Same company has rigs in for No. 1 A. C. Tridline farm, Lot 32, Perry Township, and No. 1 Mary Stanislawski farm, in Jackson Township, and is drilling No. 3 on the A. J. Stoner farm, section 3, same township.

In Holmes County, Bell Brothers No. 3 on the G. and Mary Findley farm, section 13, Mechanice Township, same county, is a gas well at a depth of 812 feet.

In Summitt County, Brooks Johnson completed a gas well on the F. and J. Bowman farm, section 1, Twinsburg Township, at a depth of 450 feet.

In Coshocton County, the Upham Gas Co. No. 1 on the Alonzo Spurgeon farm, Lot 19, Tiverton Township, is a gas well at 2,997 feet.

In Starke County, the East Ohio Gas Co. No. 2 on the B. L. Albright farm, section 9, Jackson Township, is a dry hole at a total depth of 4,340 feet, and same company's No. 1 on the N. B. Keck farm, section 9, same township, is a gas well at a depth of 4,340 feet.

In Cuyahoga County, Schneider & Wyles No. 1 on the Howard L. Simmons farm, section 4, Dover Township, was a dry hole at a total depth of 2,512 feet. In Independent Township, same county, C. A. McMillen No. 1 on the Geisendorfer farm, was a dry hole.

INDIANA FIELD

The Indiana field shows some fairly good producers in both oil and gas. In Pike County, Murphy Oil Co. No. 1 on the Ora Waltz farm, NW SW section 33, Clay Township, produced an initial of 55 bbls. at a depth of 1,061 feet. Harry Hanson & Co. No. 1 Jesse Campbell farm, section 32, same township, produced an initial of 25 bbls. at a depth of 1,651 feet. Manager Discount Corp. No. 3 on the Jennie Cassidy farm, section 32, Clay Township, was a dry hole at a depth of 2,114 feet.

In Knox County, Phillips Petroleum Co. No. 2 J. A. McAndrews farm, NW NW section 14, Busseron Township, is a gas well at 960 feet.

In Vanderburg County, L. R. Henley & Co. No. 1 on the Joseph B. Glazier farm, produced 150 bbls. initially. It is in section 31, German Township. A. E. Swope is drilling No. 3 on the John L. Drake farm, and the Union Oil Co. is drilling No. 1 John and Tillie Market, section 11, same township.

In Huntington County, Charles Wiley No. 4 on the E. Lentz farm, SW NW section 18, Salamonie Township, produced an initial of 25 bbls.

In Hancock County, J. Harvey Snider No. 1 on the Ora Nicholson farm, NE NE section 33, Brandywine Township, is a gas well at a depth of 958 feet.

KENTUCKY FIELD

In McLean County, Kentucky, in the Calhoun area, the Ohio Oil Co. No. 8 on the G. B. McManama farm, produced an initial of 240 bbls. Hupp & Duff No. 3 on the Widow Givings farm, same county, produced 60 bbls. Kentucky Producing Co. No. 1 on the Rowen heirs farm, produced an initial of 35 bbls.

Johnson Young & Co. No. 1 on the Guy Rowen farm, in the Livermore area, is a dry hole. Felix Miles No. 2 on the Kelley Athern farm, is a dry hole. J. B. Mayer & Co. No. 7 on the C. C. Crowe produced 3 bbls.

In Ohio County, the Sunflower Oil Co. No. 12 on the Sally Jones at Oak Station, was dry and abandoned. Hupp & Co. No. 8 R. B. Canary farm, in the Smith pool, is a dry hole. Teller & Co. No. 1 on the C W. Farmer farm, was a dry hole, and Newton & Co. No. 1 on the L. Oller farm, was a failure. In Cane Run Petroleum Co. No. 8 on the A. F. Bellamy farm, produced an initial of 30 bbls., and the Kentucky Natural Gas Co. No. 15 on the Nanny R. Rodgers farm, produced 50 bbls. initially.

In Muhlenburg County, the Ohio Oil Co. No. 2 on the R. B. Kennedy farm, in Greenville area, produced 30 bbls. the first 24 hours.

Rocky Mountain Fields

(Continued from Page 109)

water and 100 ft. oil from lower C.B. at 3,094-3,110 ft.; P.B. to 3,106 ft.; will shoot.
Whetstone et al No. 1 Tribal-125, S NE NE sec. 12-32n-6w. Loc. (first report).
Whetstone et al No. 1 Tribal-118, C SW SW sec. 1-32n-6w. Loc. (first report).
Wilkinson et al No. 1 Allotted-127, C NE NE sec. 1-32n-6w. Drlg. 775 ft.; Colo. 630 ft.; 10-in. 671 ft.
Stanley Gray No. 1 Allotted-132, NW SE NW sec. 22-34n-7w. Drlg. 3,050 ft.

Petroleum County

H. C. Rowland No. 3 Govt., CEL NE SW sec. 18-17n-24e. Drlg. 407 ft. (cor.).
West Dome Oil Co. No. 1, SW SE NE sec. 9-15-29e. T.D. 1,444 ft.; perforated pipe at 1,260-75 ft. in first Cat Creek; R.U. to pump.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15w. Drlg. 360 ft. (cor.).

Pondera County

Wm. M. Fulton No. 1-A Price, SW NE NE sec. 18-27n-4w. Drlg. 1,510 ft.
Clinch Pet., Ltd., No. 1 Hollan, NW SW NW sec. 12-23-6w. Cmtd. cave at 2,000 ft.; W.O.C.
Texas Co. No. 1 Valier Unit No. 1, C NW SE sec. 32-31n-5w. Drlg. 2,775 ft.; 8⅝-in. at 2,756 ft.
Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. Rng. 8¼-in. at 1,570 ft.
Jones-Chambers No. 1 Erickson, SW SE SW sec. 3-27-4w. Bldg. drk.

Teton County

R. C. Tarrant No. 1 Wallenstein, NW NW SW sec. 9-27-5w. Drlg. 750 ft.

Toole County

Three completions, one of them estimated at 100 bbls. a day, were completed in the Kevin-Sunburst field. Burt Smith No. 1 Haugen, SE SE NW section 2-35-3w, is estimated at 100 bbls. from the Ellis-Madison at 1,910-15 feet. It will acidize.

The Continental Oil Co. No. 7 State, SE NE NE section 16-35-2w, pumped 36 bbls. first 24 hours after acidizing with 1,000 gallons from the Ellis-Madison at 1,560-68 feet. The Colonel-Kevin Oil Co. No. 7 Rock, NE NE section 27-35-3w, made 56 bbls. of oil and 112 bbls. of water first 24 hours from the Ellis-Madison at 1,671-72 ft.

Alexander-Sorrell No. 1 Strange, NE NE SE sec. 31-35n-3w. Drlg. 200 ft.
Big West Oil Co. No. 2 Dalquist, NW NE NW sec. 21-35n-3w. Drlg. 1,580 ft.
Big West Oil Co. No. 1 Dalquist, SW NE NW sec. 21-35n-3w. Drlg. 1,705 ft. in sd.
Boru Oil Co. No. 1 Reynolds, SW NE NW sec. 31-33n-4w. Spdg. Par Oil Co. in chg. of drlg.
A. E. Crumley No. 9 Shaw, SE SW NE sec. 35-36n-2w. Drlg. 1,380 ft.
Agen & Goeddertz No. 1 Goeddertz, C SE NE sec. 16-35n-3w. Drlg. 1,460 ft.; gas in Sunburst at 1,390-1,403 ft.
Carscallen & Mitchener No. 1 Krueger, 1,320 ft. W of E line, 1,980 ft. S of N line, sec. 10-34n-2w. T.D. 1,650 ft.; acidized; did not recover load.
Coolidge & Coolidge No. 2 State, NE NW NW sec. 36-36n-2w. T.D. 1,550 ft.; rng. 6¼-in.
Coolidge & Coolidge No. 1 Hanlon, SW SW SE sec. 26-36n-2w. R.U.
Coolidge & Coolidge No. 2 Shaw, SE SE SE sec. 26-36n-2w. Drlg. 1,258 ft.
Continental Oil Co. No. 9 State, SE SW NE sec. 16-25-2w. Drlg. 520 ft.
Fraser & Smith No. 1 Crabtree, NE NE SE sec. 14-34n-2w. T.D. 1,390 ft.; Ellis-Madison 1,374 ft.; acidizing.
Imperial-Craig Oil Co. No. 19 Bluhm, NE NW NW sec. 19-35n-1w. Drlg. 740 ft. (first report).
T. P. Kyle No. 1 Wolnsti, CSL SE SE sec. 3-27n-1w. T.D. 850 ft.; fshg. (note change in loc.).
Ke-Sun Oil Co. No. 7 Stewart, NE NE sec. 25-35n-3w. Drlg. 700 ft. (first report).
Wm. McKnight No. 3 Seabrook, NE NW SW sec. 19-35-2w. Drlg. 800 ft.
Monopeg Oils, Ltd., No. 3 Dipple, CSL SW NW sec. 28-35n-1w. T.D. 1,450 ft.; R.U. to drill in.
Munger No. 1 Peterson, NW NW SW sec. 8-35n-2w. T.D. 1,200 ft.; fsg.
C. T. Olen No. 6 Engemoen, SE SW NW sec. 14-35n-2w. Drlg. 880 ft.
E. O. Reickoff No. 2 Govt., SW SW NE sec. 3-35n-3w. Cmtd. 5 3/16-in. at 1,635 ft.
Welch Bros. No. 1 Dewald, SW NE NE sec. 26-36n-2w. T.D. 1,787 ft.; fsg.
Watson No. 1 Leach, SE SE NE sec. 31-35n-3w. Drlg. 1,540 ft.
Superior Oil Co. No. 5 Haugen, SE SE NE sec. 11-35n-3w. Drlg. 500 ft.
Nepstead & Vanderpas No. 1 Solberg, NE NW SE sec. 20-35n-3w. Drlg. 1,680 ft.; slight show gas in Sunburst at 1,560-1,605 ft.
R. C. White No. 2 Haugen, CNL NE SE sec. 11-35n-3w. Spdg. 100 ft.

UTAH

Emery County

California Co. No. 1 Palm, Unit 1, C SW SW sec. 22-23s-11e. Pouring cmt. and drlg. W.W.

Grand County

Glen Ruby and others' No. 1 State, SW NW NW section 34-21s-16e, Green River district, is plugging to abandon at 2,626 feet in the Kiabab formation. The Shinarump at 1,931-38 feet was dry.

Columbia Crude Co. No. 1 Rath, SW SE sec. 12-35n-20e. Drlg. 920 ft.
Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 32-22e. S.D. 4,880 ft. to resurvey; went through 2,400 ft. of Permian, Rico and Cutler beds.

Utah County

Diamond Oil Co. No. 4 Govt., CSL SE NW sec. 10-8s-5e. T.D. 3,956 ft.; cmtd. 3½-in. at 3,950 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. T.D. 1,445 ft.; fshg.

Washington County

Arrowhead Pet. Corp. No. 1-A, SE SW NE sec. 1-43s-15w. Drlg. 2,477 ft. after cmtg. off tools.

Southwest Texas Fields

(Continued from Page 105)

San Patricio County interest is divided among the Taft and Plymouth fields and the several wildcats drilling in that section. The two Benedum & Trees tests drilling west of Plymouth are approaching critical stages, both being on sand at about 5,730 feet.

The Taft field was given a northwest extension with the completion of Cage Production Co. No. 1 Mayo. The new well was brought in from the shallower sand of the field, at 3,962-74 feet, making 260 bbls. per day. Two new producers were brought in on the south edge of the Plymouth field, and drilling is under way in the bed of Chiltipin Creek by the Centennial Oil Co. on tracts leased from the state.

The Pearsall field of Frio County is expected to be extended early in the week by the completion of Termo Oil Co. (Combs & Oakes) No. 1 Arp. The test cored saturated chalk from 5,535 to 5,555 feet.

In Zavalla County, the Bay Oil Co. No. 1 National Bank of Commerce in section 43 is drilling below 6,350 feet to the Buda after encountering shows of oil at 5,940 feet.

About 2½ miles southeast of the Ray field in Bee County, Howeth & Swiger are setting casing on the wildcat No. 1 Voss after coring saturated sand at 4,017 to 4,021 feet.

Details of completions and drilling operations in the Southwest Texas fields will be found in the section devoted to drilling which starts on page 115.

Units Are Merged by Cities Service Co.

NEW YORK, June 22.—In furtherance of the policy of simplifying its corporate structure, Cities Service Co. announced consolidation of six of its oil marketing, export and transportation units.

Under a joint plan and agreement of merger filed with the department of state in Harrisburg, Pa., Crew Levick Co. has been consolidated with Cities Service Export Oil Co., Petroleum Import & Export Corp., Cities Service Tank Line Co., Cities Service Transportation Co. and R. A. Newcombe Oil Co.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 15 Capitan, Santa Barbara Co.	32- 5-30	1,536	flow. 310 b.d.
Shell Oil Co., No. 16 Capitan, Santa Barbara Co.	32- 5-30	731	sd. sh. drlg.
La Canada Oil Co., No. 1 Capitan, Santa Barbara Co.	35- 5-30	735	gr. sd. drlg.
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara	15- 4-29	6,363	wet
Spalding, Caroline, No. 5 Elwood, Santa Barbara Co.	tideland	3,773	flow. 715 b.d.
Bush Oil Co., No. 1 Santa Maria, Santa Barbara Co.	13-10-34	1,671	sd. sh. drlg.
Union Oil Co., No. 6 Santa Maria, Santa Barbara Co.	24-10-34	2,090	sd. sh. drlg.
Union Oil Co., No. 16 Orcutt, Santa Barbara Co.	26- 9-34	3,778	swabbing
Moore, Inc., No. 1 Santa Maria, Santa Barbara Co.	25-10-35	3,897	sd. sh. drlg.
Bankline Oil Co., No. 1 Coal Oil Pt., Santa Barbara	tideland	5,516	redrlg. 1,672
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	3,479	will test
Pet. Securities Co., No. 1 Bardsdale, Ventura Co.	7- 3-19	5,763	sd. sh. drlg.
Calkan Pet. Co., No. 1 Sespe, Ventura Co.	23- 5-20	576	cleaning out
Supreme Oil Co., No. 1 Sespe, Ventura Co.	1- 4-20	902	sd. sh. drlg.
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,264	hd. sh. drlg.
Topa Topa Oil Co., No. 1 Sespe, Ventura Co.	33- 5-19	1,813	hd. sd. drlg.
Wasibi Oil Co., No. 1 Sespe, Ventura Co.	33- 5-19	201	cleaning out
Laing & Jacobs, No. 1 Shiells Canyon, Ventura Co.	32- 4-19	1,275	fish. D.P.
Bestco Pet. Co., No. 1 Shiells Canyon, Ventura Co.	2- 3-19	4,000	form. test
Bankline Oil Co., No. 1 Shiells Canyon, Ventura Co.	3- 3-19	4,617	will perf.
Petroleum Securities, No. 1 Shiells Canyon, Ventura Co.	3- 3-19	3,664	O.S. drlg.
Texas Co., No. 129 Shiells Canyon, Ventura Co.	4- 3-19	4,812	P.B. 4,260
Texas Co., No. 130 Shiells Canyon, Ventura Co.	4- 3-19	3,310	cmtd. 3,273
Texas Co., No. 131 Shiells Canyon, Ventura Co.	4- 3-19	2,993	sd. sh. drlg.
Hull, James, No. 1 Santa Susana, Ventura Co.	2- 2-18	1,791	recmtd. 500
Bolsa Chica Oil Co., No. 3 Temescal, Ventura Co.	4- 4-18	2,960	O.S. drlg.
Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co.	4- 4-18	799	cmtd. 575
Ventura Expl. Co., No. 1 Saticoy, Ventura Co.	30- 3-22	7,473	gr. sd. drlg.
General Pet. Corp., No. 2 Oxnard, Ventura Co.	26- 2-23	7,674	sd. sh. drlg.
Continental Oil Co., No. 5 San Miguelito, Ventura Co.	24- 3-24	5,815	O.S. drlg.
C. C. M. Oil Co., No. 1 Javon, Ventura Co.	15- 3-24	4,822	sd. sh. drlg.
General Pet. Corp., No. 1 Javon, Ventura Co.	15- 3-24	....	bldg. road
Continental Oil Co., No. 2 Pirie, Ventura Co.	13- 4-23	1,223	pump. 20 b.d.
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	6,630	sd. sh. drlg.
Associated Oil Co., No. 2 Lost Hills, Kern Co.	2-26-20	1,143	pump. 49 b.d.
East Puente Oil Co., No. 21 McKittrick, Kern Co.	11-30-21	1,265	O.S. drlg.
Calcrude Pet. Co., No. 1 McKittrick, Kern Co.	34-30-22	1,504	cleaning out
Welport Oil Co., No. 14 McKittrick, Kern Co.	26-29-21	1,572	gas; shut in
Bergman, H. L., No. 1 McKittrick, Kern Co.	30-30-22	1,070	sd. sh. drlg.
General Pet. Co., No. 1 South Belridge, Kern Co.	30-28-21	11,377	suspended
Standard Oil Co., No. 4 North Belridge, Kern Co.	36-27-20	8,075	sd. sh. drlg.
Associated Oil Co., No. 5 North Belridge, Kern Co.	34-27-20	6,471	hd. sh. drlg.
Belridge Oil Co., No. 18-35 North Belridge, Kern Co.	35-27-20	7,542	sd. sh. drlg.
Belridge Oil Co., No. 17-35 North Belridge, Kern Co.	35-27-20	8,000	sd. sh. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	9,684	milling
Union Oil Co., No. 21 North Belridge, Kern Co.	36-27-20	7,894	br. sh. drlg.
C. C. M. Oil Co., No. 18 Kern Front, Kern Co.	23-28-27	2,260	bailing
Republic Pet. Co., No. 11 Kern Front, Kern Co.	11-28-27	1,952	rig. to pump
Republic Pet. Co., No. 14 Kern Front, Kern Co.	12-28-27	....	material
Seven Spot Oil Co., No. 1 Kern Front, Kern Co.	13-28-27	1,076	sd. sh. drlg.
Vega Oil Co., No. 1 Kern Front, Kern Co.	11-28-27	1,700	pump. 60 b.d.
Texas Co., No. 5 Kern Front, Kern Co.	23-28-27	1,850	deepening
National Oil Co., No. 6 Kern Front, Kern Co.	11-28-27	1,902	bailing
General Pet. Corp., No. 6 Kern Front, Kern Co.	14-28-27	1,937	pump. 305 b.d.
Kern River Oilfields, No. 8 Kern Front, Kern Co.	25-28-27	....	bldg. rig
American Expl. Co., No. 1 Kern Front, Kern Co.	16-28-27	2,862	cmtd. 2,813
Ausbrit Oil Co., No. 1 Premier, Kern Co.	20-27-27	2,139	P.B. 2,075
Santa Carla Oil Co., No. 1 Dominion, Kern Co.	19-26-28	1,165	sd. sh. drlg.
Union Oil Co., No. 11 Mount Poso Tribe, Kern Co.	28-27-28	894	sd. sh. drlg.
Cal-Coast Apex Oil Co., No. 1 Mount Poso, Kern Co.	36-26-27	1,550	cleaning out
General Pet. Corp., No. 30 Mount Poso, Kern Co.	16-27-28	1,577	bailing
Honolulu Oil Corp., No. 20 Round Mountain, Kern Co.	18-28-29	2,140	rig. to pump
Honolulu Oil Corp., No. 21 Round Mountain, Kern Co.	18-28-29	....	rigging up
Benito Huntington Oil, No. 1 Round Mountain, Kern	8-28-29	2,050	temp. idle
Jergins Trust, No. 24 Edison, Kern Co.	23-30-29	1,690	reaming
Jergins Trust, No. 25 Edison, Kern Co.	14-30-29	2,502	cmtd. 1,670
Jergins Trust, No. 26 Edison, Kern Co.	23-30-29	1,160	sd. sh. drlg.
Buffalo Oil Co., No. 2 Edison, Kern Co.	24-30-29	928	pump. 70 b.d.
Union Oil Co., No. 4 Edison, Kern Co.	14-30-29	1,120	sd. sh. drlg.
Wood-Callahan Oil Co., No. 1 Edison, Kern Co.	21-30-29	3,186	rig. to pump
Wood-Callahan Oil Co., No. 2 Edison, Kern Co.	23-30-29	2,072	O.S. drlg.
Higgins, W. F., No. 1 Edison, Kern Co.	17-30-29	3,276	sd. sh. drlg.
M. & L. Oil Co., No. 1 Edison, Kern Co.	23-30-29	2,100	sd. sh. drlg.
Texas Co., No. 8 Edison, Kern Co.	23-30-29	2,115	pump. 244 b.d.
Pioneer Holding Co., No. 2 Edison, Kern Co.	17-30-30	2,365	dry, abd.
Texas Co., No. 1 San Emidio, Kern Co.	11-11-22	7,622	C.O. 4,350
Bender, E. A., No. 1 San Emidio, Kern Co.	14-10-23	570	sd. sh. drlg.
Seaboard Oil Corp., No. 3 Buttonwillow, Kern Co.	8-28-23	3,706	sd. sh. drlg.
Elk Hills Pet. Co., No. 1 Elk Hills, Kern Co.	14-31-24	....	rigging up
Evans, H. B., No. 11 Midway-Sunset, Kern Co.	35-32-23	650	sd. sh. drlg.
Gibson Oil Co., No. 5 Midway-Sunset, Kern Co.	8-11-23	1,891	sd. sh. drlg.
Chief Oil Co., No. 3 Midway-Sunset, Kern Co.	6-11-23	2,700	cleaning out
General Pet. Corp., No. 15-B Midway-Sunset, Kern Co.	6-11-23	2,388	will cmt.
General Pet. Corp., No. 335 Midway-Sunset, Kern Co.	35-12-24	1,160	sd. sh. drlg.
Signal Oil Co., No. 6 Midway-Sunset, Kern Co.	8-11-23	1,381	sd. sh. drlg.
Standard Oil Co., No. 25 Midway-Sunset, Kern Co.	36-12-24	2,698	pump. 98 b.d.
Standard Oil Co., No. 203 Midway-Sunset, Kern Co.	5-11-23	2,435	cmtd. 2,380
Standard Oil Co., No. 9 Midway-Sunset, Kern Co.	5-11-23	1,973	sd. sh. drlg.
South Cerritos Oil Co., No. 1 Midway-Sunset, Kern Co.	23-32-23	1,590	sd. sh. drlg.
Alford Oil Co., No. 5 Midway-Sunset, Kern Co.	4-32-23	3,358	redrlg. 3,163
Bargol Oil Co., No. 1 Mount Poso, Kern Co.	11-27-27	2,600	sd. sh. drlg.
Tilton & Harp, No. 1 Mount Poso, Kern Co.	6-27-28	2,450	may abdn.
Lytle, R. S., No. 1 Mount Poso, Kern Co.	26-27-28	1,438	cleaning out
Dixie Lee Oil Co., No. 4 Fruitvale, Kern Co.	23-29-27	3,476	sd. sh. drlg.
Mosebach Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	4,121	cmtd. 4,030
Trico Oil & Gas Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,472	P.B. 3,220
H. L. J. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,212	cleaning out
Western Gulf Oil Co., No. 24 Fruitvale, Kern Co.	22-29-27	3,697	sd. sh. drlg.
Western Gulf Oil Co., No. 26 Fruitvale, Kern Co.	27-29-27	3,420	sd. sh. drlg.
Mohawk Oil Co., No. 16 Fruitvale, Kern Co.	26-29-27	1,761	sd. sh. drlg.
Nydia Pet. Co., No. 1 Fruitvale, Kern Co.	26-29-27	3,476	sd. sh. drlg.
Hogan Pet. Co., No. 15 Mountain View, Kern Co.	4-31-29	5,531	sd. sh. drlg.
Hogan Pet. Co., No. 16 Mountain View, Kern Co.	32-30-29	3,280	sd. sh. drlg.
Buffalo Oil Co., No. 3 Mountain View, Kern Co.	19-30-29	4,682	sd. sh. drlg.
Petrol Prod. Co., No. 1 Mountain View, Kern Co.	32-30-29	5,482	sd. sh. drlg.
Treasure Oil Co., No. 1 Mountain View, Kern Co.	12-30-28	5,242	gr. sd. drlg.
Jergins Trust, No. 8 Mountain View, Kern Co.	19-30-29	5,241	pump. 212 b.d.
Shell Oil Co., No. 10 Mountain View, Kern Co.	32-30-29	6,050	pump. 270 b.d.
Shell Oil Co., No. 11 Mountain View, Kern Co.	32-30-29	4,680	sd. sh. drlg.
Vesta Pet. Co., No. 10 Mountain View, Kern Co.	19-30-29	4,795	sd. sh. drlg.
Mohawk Pet. Co., No. 1 Arvin, Kern Co.	10-31-29	4,251	sd. sh. drlg.
R. & R. Dev. Co., No. 3 Arvin, Kern Co.	32-30-30	860	granite
Ohio Oil Co., No. 1 Rio Bravo, Kern Co.	1-30-25	8,251	sd. sh. drlg.
Round Mountain Oil Co., No. 2 Round Mountain, Kern	19-28-29	1,913	will P.B.
Barnsdall Oil Co., No. 6 Round Mountain, Kern Co.	7-28-29	1,695	pump. 165 b.d.
Shell Oil Co., No. 6 Round Mountain, Kern Co.	7-28-29	1,625	bailing
Shell Oil Co., No. 12 Round Mountain, Kern Co.	7-28-29	1,860	cmtd. 1,844
Shell Oil Co., No. 14 Round Mountain, Kern Co.	7-28-29	1,934	bailing
Burkeholder Oil Corp., No. 1 Midway-Sunset, Kern Co.	23-32-23	1,987	sd. sh. drlg.
Union Oil Co., No. 8 Midway-Sunset, Kern Co.	25-12-24	2,507	will deepen
Texas Co., No. 15 Midway-Sunset, Kern Co.	32-32-24	2,076	sd. sh. drlg.
Obispo Oil Co., No. 12 Midway-Sunset, Kern Co.	32-12-23	2,526	will test
St. Helens Pet. Co., No. 1 Midway-Sunset, Kern Co.	22-32-24	3,310	will deepen
Jerman, R. W., No. 1 Midway-Sunset, Kern Co.	31-12-23	3,380	P.B. 2,780
Ohio Oil Co., No. 1 Tejon, Kern Co.	36-11-19	3,480	sd. sh. drlg.
Tejon Ridge Oil Co., No. 1 Comanche, Kern Co.	23-32-29	2,397	cleaning out
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	6,572	hd. sd. drlg.
Conlon, J. M., No. 1 Coalinga, Fresno Co.	30-19-15	1,120	sd. sh. drlg.
Union Oil Co., No. 1 Lillis-Welsh, Fresno Co.	24-21-16	11,127	P.B. 10,729
K. N. D. A., No. 2 Kettleman North, Fresno Co.	20-21-17	8,387	hd. sh. drlg.
K. N. D. A., No. 38 Kettleman North, Fresno Co.	18-21-17	7,670	sd. sh. drlg.
K. N. D. A., No. 43 Kettleman North, Fresno Co.	30-21-17	4,655	sd. sh. drlg.
K. N. D. A., No. 74 Kettleman North, Fresno Co.	30-21-17	7,995	sd. sh. drlg.
K. N. D. A., No. 81 Kettleman North, Fresno Co.	24-21-16	6,991	br. sh. drlg.
K. N. D. A., No. 36 Kettleman North, Kings Co.	36-22-18	9,733	P.B. 8,550
K. N. D. A., No. 63 Kettleman North, Fresno Co.	28-21-17	....	rig
Standard Oil Co., No. 25 Kettleman North, Fresno Co.	19-21-17	7,525	br. sh. drlg.
Standard Oil Co., No. 42 Kettleman North, Fresno Co.	19-21-17	7,470	sd. sh. drlg.
Standard Oil Co., No. 56 Kettleman North, Fresno Co.	19-21-17	7,574	br. sh. drlg.
Standard Oil Co., No. 65 Kettleman North, Fresno Co.	19-21-17	7,920	recmtd. 7,915
Standard Oil Co., No. 72 Kettleman North, Fresno Co.	19-21-17	8,173	cmtd. 8,037
Kettleman View Oil Co., Well No. 1, Kings Co.	29-22-19	1,629	will P.B.
Hurndall, John, No. 1 Pyramid Hills, Kings Co.	16-24-18	4,201	P.B. 1,981
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings	21-22-20	2,495	hd. sh. drlg.
Associated Oil Co., No. 1 Avenal, Kings Co.	35-23-17	161	sd. sh. drlg.
United Oil Co., No. 1 Panorama, San Luis Obispo Co.	2-32-21	1,067	hd. sd. drlg.
Taft Well Drlg. Co., No. 1 Pismo, San Luis Obispo Co.	31-31-13	3,765	hd. sh. drlg.
Martin, J. D., No. 4 Pismo, San Luis Obispo Co.	5-32-13	2,236	sd. sh. drlg.
Martin, J. D., No. 5 Pismo, San Luis Obispo Co.	5-32-13	1,996	sd. sh. drlg.
Birch-Royer Oil Co., No. 1 Pismo, San Luis Obispo Co.	33-31-13	1,850	redrlg. 1,464
Barnsdall Oil, No. 1 Carissa Plains, San Luis Obispo	24-28-17	3,559	fish. D.P.
Burch, I. L., No. 1 Cuyama, San Luis Obispo Co.	4-10-26	2,375	sd. sh. drlg.
Standard Oil Co., No. 1 McDonald Island, San Joaquin	25- 2-4	5,227	new gas field
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24-3	7,997	hd. sh. drlg.
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	8,994	cleaning out
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	4,357	fish. reamer
Amerada Pet. Co., No. 1 Rio Vista, Solano Co.	26- 4-2	4,485	reaming
Fortine, W. H., No. 1 Terra Bella, Tulare Co.	22-22-26	1,998	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Marvin, J. L., No. 1 El Segundo, Los Angeles Co.	7- 3-14	7,521	P.B. 7,475

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L, center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardising (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Ohio Oil Co., No. 1 El Segundo, Los Angeles Co.	7- 3-14	4,880	sd. sh. drlg.
Signal Finance, No. 1 Hawthorne, Los Angeles Co. ...	10- 3-14	3,841	cleaning out
Clark, T. E., No. 1 Torrance, Los Angeles Co.	23- 4-14	3,875	resume work
Brown, R. A., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,300	test W.S.O.
White Five Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	3,385	cleaning out
Pongratz Oil Co., No. 1 Torrance, Los Angeles Co. ...	31- 3-14	3,649	pump. 177 b.d.
Regent Oil Co., No. 1 Torrance, Los Angeles Co.	6- 4-14	3,567	pump. test
Sterling Oil Co., No. 1 Torrance, Los Angeles Co. ...	31- 3-14	4,200	redrlg. 3,665
Sterling Oil Co., No. 2 Torrance, Los Angeles Co. ...	31- 3-14	3,605	pump. 170 b.d.
Dumas-Lewis Oil Co., No. 2 Torrance, Los Angeles Co.	6- 4-14	3,360	cmtd. 3,280
B. & N. Oil Co., No. 1 Torrance, Los Angeles Co. ...	18- 4-14	3,427	will deepen
Macvan Oil Co., No. 1 Torrance, Los Angeles Co. ...	31- 3-14	3,741	cmtd.
Continental Royalties, No. 1 Torrance, Los Angeles Co.	6- 4-14	2,642	sd. sh. drlg.
Rennek Oil & Gas Co., No. 1 Torrance, Los Angeles Co.	5- 4-14	3,448	bailing
Rennek Oil & Gas Co., No. 2 Torrance, Los Angeles Co.	5- 4-14	730	sd. sh. drlg.
C. C. M. Oil Co., No. 23 Torrance, Los Angeles Co. ...	8- 4-14	4,887	P.B. 4,854
Silver Pet. Co., No. 1 Inglewood, Los Angeles Co. ...	16- 2-14	1,962	sd. sh. drlg.
West American Oil Co., No. 1 Dominguez, Los Angeles	3- 4-13	3,875	sd. sh. drlg.
Union Oil Co., No. 8 Dominguez Carson, Los Angeles	33- 3-13	7,276	sd. sh. drlg.
Union Oil, No. 44 Dominguez Callender, Los Angeles	33- 3-13	8,103	flow. 1,640 b.d.
Barnsdall Oil Co., No. 15 Rosecrans, Los Angeles Co.	18- 3-13	5,682	cmtd. 5,639
Republic Pet. Co., No. 1 Rosecrans, Los Angeles Co...	18- 3-13	3,784	sd. sh. drlg.
Mars Oil Co., No. 1 Athens, Los Angeles Co.	7- 3-13	3,968	cleaning out
Associated Oil Co., No. 16 Seal Beach, Los Angeles Co.	11- 5-12	6,212	test. W.S.O.
Continental Oil Co., No. 29 Seal Beach, Los Angeles Co.	8- 5-12	4,750	sd. sh. drlg.
Standard Oil Co., No. 27 Seal Beach, Los Angeles Co.	3- 5-12	6,550	cmtd. 6,032
Eastern Oil Co., No. 1 Del Rey, Los Angeles Co.	22- 2-15	7,432	prod. test
Union Oil Co., No. 32 Del Rey, Los Angeles Co.	27- 2-15	6,025	cmtd. 6,014
Yant Pet. Corp., No. 1 Newhall, Los Angeles Co.	1- 3-16	2,024	recmtd. 1,673
Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co. ...	24- 4-17	....	grade
Harbor Pet. Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,566	rig. to pump
Hull, James, No. 1 Wilmington, Los Angeles Co.	20- 4-13	2,655	sd. sh. drlg.
Codri Oil Co., No. 1 Wilmington, Los Angeles Co.	29- 4-13	3,901	test. W.S.O.
General Pet. Corp., No. 1 Wilmington, Los Angeles Co.	4- 5-13	2,764	sd. sh. drlg.
Monarch Oil Corp., No. 1 Topanga Canyon, Los Angeles	5- 1-16	1,530	sd. sh. drlg.
Standard Oil Co., No. 82 Montebello, Los Angeles Co...	2- 2-12	8,386	hd. sh. drlg.
Standard Oil Co., No. 85 Montebello, Los Angeles Co...	2- 2-12	2,481	sd. sh. drlg.
Universal Consd., No. 7 Montebello, Los Angeles Co. ..	5- 2-11	1,874	sd. sh. drlg.
Richfield Oil Co., No. 1 Montebello, Los Angeles Co...	5- 2-11	6,640	sd. sh. drlg.
Richfield Oil Co., No. 2 Montebello, Los Angeles Co...	5- 2-11	5,900	flow. 2,800 b.d.
North American, No. 2 Montebello, Los Angeles Co...	5- 2-11	6,302	hd. sd. drlg.
St. Helens Pet. Co., No. 7 Montebello, Los Angeles Co.	5- 2-11	5,585	form. test
Keystone Oil Co., No. 1 Pico, Los Angeles Co.	9- 2-11	5,332	cleaning out
Bernstein, M. E., No. 1 Artesia, Los Angeles Co.	25- 3-12	5,888	redrlg. 4,096
McVicar & Rood, No. 1 San Jose Hills, Los Angeles Co.	6- 2-9	2,400	sd. sh. drlg.
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co.	26- 5-5	2,510	hd. sh. drlg.
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	2,130	bail. sand
Terry, George, No. 1 Westminister, Orange Co.	17- 5-11	5,365	sd. sh. drlg.
Hillman & Long, No. 1 Westminister, Orange Co.	14- 5-11	7,701	cmtd. 5,557
West American Oil Co., No. 1 East Coyote, Orange Co.	24- 3-10	3,598	sd. sh. drlg.
Bartholomae Oil Co., No. 2 East Coyote, Orange Co. ..	24- 3-10	4,451	sd. sh. drlg.
Union Oil Co., No. 22 Chapman Richfield, Orange Co.	30- 3-9	2,986	cmtd. 2,960
Union Oil Co., No. 29 Chapman Richfield, Orange Co.	30- 3-9	4,400	sd. sh. drlg.
Union Oil Co., No. 30 Chapman Richfield, Orange Co.	30- 3-9	516	sd. sh. drlg.
Unfon Oil Co., No. 31 Chapman Richfield, Orange Co.	30- 3-9	3,791	sd. sh. drlg.
Union Oil Co., No. 32 Chapman Richfield, Orange Co.	30- 3-9	3,183	cleaning out
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3-9	4,520	will deepen
Tehama Pet. Co., No. 2 Kraemer, San Bernardino Co.	33- 2-8	566	sd. sh. drlg.
Tehama Pet. Co., No. 3 Kraemer, San Bernardino Co.	3- 3-8	312	hd. sh. drlg.
Tehama Pet. Co., No. 4 Kraemer, San Bernardino Co.	32- 2-8	148	hd. sh. drlg.
Equitable Pet. Co., No. 1 Wildcat, San Bernardino Co.	11-10-5	2,398	hd. sd. drlg.

OKLAHOMA

Week Ending June 20

NORTHERN OKLAHOMA

Beckham County

Jo-Gail Drlg. Co. No. 1 Gilliland, C NE NE sec. 33-8-26w. R.U.

Cleveland County

Hall-Briscoe, Inc., No. 1 Fant, SW SW NE sec. 27-10-2w. S.D. at 7,511 ft.

Cool County

Carter Oil Co. and Magnolia Pet. Co. No. 1 James, SW NW SW sec. 35-1s-8. T.D. 280 ft.; W.O.C.

W. C. Mitchell No. 1 Quiett, NE NW SW sec. 35-1-8. Drlg. 1,051 ft.

Shell Pet. Corp. No. 3 Hill, SE SE NW **sec. 30-3-10. Hunton 5,280 ft.;** Sylvan **5,355 ft.;** Viola 5,448 ft.; S.O. 5,640-57 sd. 6,275 ft.; T.D. 6,457 ft.; P.B. 4,-330 ft. Bailing.

Sinclair Prairie Oil Co. No. 1 Culver, NE NE SW sec. 16-1-8. T.D. 486 ft.; W.O.C.

Garfield County

Herndon Drlg. Co. etal No. 1 Branson, SW SW SE sec. 23-24-3w. Drlg. 4,780 ft.

Earl McBride et al No. 1 Gage Est., SE SE NW sec. 27-22-3w. T.D. 1,255 ft.; lowering 10-in. csg.

W. J. Sherry et al No. 1 Haken, NW NW SW sec. 32-20-10w. Miss. L. 5,960 ft.; whpstk. 5,839 ft.; T.D. 6,456 ft.

Stanolind O. & G. Co. et al No. 1 Brunken, SW SW NE sec. 32-23-4w. Top Dense **5,915 ft.; Dolomite 5,935 ft.; first Wil-cox 5,975 ft.; second Wilcox 6,033 ft.; H.F.W. 6,130-33 ft.;** T.D. 6,133 ft. in sd.; R.U.R. to deepen.

Garvin County

Charles E. Carter et al No. 1 Wood, NW **SW SE sec. 5-4-3. O.W.D.D.; sd. 2,973 ft.;** Hunton **3,000 ft.; cd. 3,010-18 ft.;** S.D.; W.O.C.

McBreath & Suggett No. 1 Lasater, SE SE SW sec. 2-3-1w. Drlg. 3,433 ft.

Grady County

John Graham et al No. 1 Castleberry, SW SE NW sec. 8-5-7w. R.U. and S.D.

Art Holt et al No. 1 Ramsey, NE SE NE sec. 31-5-8w. Loc.

Ray Stevens No. 1 Maya, NE cor. sec. 1-3-8w. Drlg.

Hughes County

Blackwell O. & G. Co. No. 1 Long, SE **NE NW sec. 29-9-9. Sand 1,215-35 ft.;** T.D. 1,695 ft.; pulling 12-in. csg.

M. H. Halsey No. 1-A Eustep, NW NW SW sec. 11-8-9. Wapanucka 3,428 ft.; Cromwell 3,452 ft.; T.D. 3,454 ft.; 2 bailers wtr. an hr.; P.B. and shot 3,030-45 ft.; est. 10,000,000 ft. of gas; P.B. to 3,412 ft.; re-shot.

George Orr et al No. 1 Morgan, NE SE SW sec. 6-7-9. Cellar and pits.

Phillips Pet. Co. No. 1 Eberle, NE NE SW sec. 12-5-9. Wapanucka 3,387 ft.; **Cromwell 4,268 ft.; Mayes 5,160 ft.;** Woodford **5,230 ft.; Hunton 5,432 ft.;** Sylvan **5,435 ft.;** Viola **5,525 ft.;** T.D. 5,540 ft.; drilled plug; 3,500 ft. fluid in hole; to recement.

Sinclair Prairie Oil Co. et al No. 1 Wil-**kly, SW cor. sec. 23-9-8. Calvin 1,505** ft.; S.D. for wtr. 3,025 ft.

Sivalls et al No. 1 Montgomery, NW SW NW sec. 7-9-9. Booch 2,950 ft.; Gil-crease 3,100 ft.; sd. 3,246-80 ft.; U.R.

Johnston County

Shell Pet. Corp. No. 1 Illinois Bankers Life, NW SE NE sec. 10-2s-7e. Spudded.

Kay County

W. O. Allen No. 1 Fulton, SE cor. sec. 18-27-4. Drlg. 1,520 ft.

Kiowa County

Beeler & Klein No. 1 Parrish, SE SE NW sec. 3-6-15w. Drlg. 230 ft.

E. A. De Bolt et al No. 1 Burnett, NW SE NE sec. 30-7-20w. Pits.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE **sec. 17-3-22. Set 10-in. csg. 1,560 ft.; T.** D. 1,750 ft.; rep. rig.

Lincoln County

Amerada Petroleum Corp. et al No. 1 Zimmerman, **SW SW NE sec. 10-12-5.** Cored 4,340-50 ft. S.O.&G.

Mid-Continent Pet. Corp. and Texas Co. No. 1 Hillman, **SW SE NE sec. 29-13-6.** Drlg. 3,050 ft.

Skelly Oil Co. No. 1 Sporn, NW NE SW sec. 21-17-3. Bldg. rig.

Logan County

W. N. Anthony and H. G. Marshall No. 1 Fruin-Eckman, **SE SE SW sec. 4-16-1.** T.D. 5,285 ft.; P.B. 5,181 ft.; **swdg. pipe.**

McClain County

Arab Pet. Corp. No. 1 Autry, NW cor. sec. 16-7-3w. T.D. 3,775 ft.; lost drill pipe; fish at 3,240 ft.; sdtkd. 3,300 ft.; S.D.O.

McCurtain County

Louis Sikes No. 1 Mitchell, C NW SW sec. 12-9s-26. Spudded and S.D. for 30 days.

McIntosh County

S. E. Dieckman No. 1 K. McIntosh, SE cor. sec. 4-12-17. S.D. 865 ft.

Indian Ty. Ill. Oil Co. No. 1 Tancred, 1-050 ft. S and 330 ft. E of C sec. 9-9-14. **Wilcox 4,525 ft.; T.D. 4,536 ft.; P.B. 4,-731 ft.;** wtr. exhausted; S.D.O.

Noble County

Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Gilliam, **NE SE SE sec. 14-**22-1. Rig.

Okfuskee County

Champlin Ref. Co. No. 1 Thompson, SW SW NW sec. 7-12-8. T.D. 1,147 ft.; fsg.

Pottawatomie County

Wofford Bros. No. 1 Sewell, SW SW SE sec. 14-7-3. Rig.

Oklahoma County

I. D. O'Shaughnessy, Inc. No. 1 Berlowitz, SE SW NE sec. 9-12-3w. S.D. 4,400 ft. for water.

H. R. Hollenback et al No. 1 Cooper, NW NW NE sec. 15-11-1. Oswego, 5,435 ft. Hunton 5,857 ft.; Sylvan 5,998 ft.; Viola 6,093 ft.; Simpson 6,133 ft.; first Wil-cox 6,232 ft.; second Wilcox 6,340-60 ft.; S.D. 6,375 ft.

Osage County

Gray & Folson No. 1 Osage, SW SW NE sec. 33-25-7. Drlg. 1,800 ft.

Stoner Bros. No. 1 Osage, NW NE SW sec. 18-22-8. Drlg. 200 ft.

Payne County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Pratt, SE cor. sec. 29-19-5. Misener 3,657 ft.; 2,000,000 ft. of gas; S.O.; Viola 3,671 ft.; T.D. 3,675 ft.; tstg.

Denver Producing & Ref. Co. et al No. 1 Pratt, NW cor. sec. 20-18-3. Bartles-ville 4,095 ft.; drlg. 4,105 ft.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. R.U.R.

Pontotoc County

Selby O. & G. Co. No. 1 Sands, NE NE NE sec. 20-3-5. Drlg. 1,725 ft.

Southard & Miller No. 1 Wilson, NW SE SW sec. 26-4-5. Spudded and S.D.

Pottawatomie County

J. L. Shaw No. 1 Illinois Life, NW SE NW sec. 1-4-5. Drlg. 1,590 ft.

Seminole County

Ark Royalty Co. No. 1 Kiker, SE SE NE sec. 9-10-7. Drlg. 2,404 ft.

J. E. Crosbie, Inc., and Blankenship & Quiett No. 1 Biggers, C N½ N½ NE sec. 30-6-8. Drlg. 980 ft.

Feimlee & Nichaelson No. 1 Belford, SE NW NE sec. 15-9-8. Sd. 1,460-1,505 ft.; S.O.&G.; S.D. 1,680 ft.

Tom Phillips & Kinrow Drlg. Co. No. 1 Cheparney, SE SE NW sec. 7-6-7. Drlg. 2,485 ft.

Twin State Oil Co. No. 1 Hamm, SW SE SW sec. 24-10-7. Drlg. 2,200 ft.

Washita County

L. P. McWhirter No. 1 fee, SW cor. sec. 34-8n-19w. T.D. 1,497 ft.; S.D.

SOUTHERN OKLAHOMA

Atoka County

D. Malarnee et al No. 2-A DOK ranch, SE cor. sec. 35-2s-13e. O.W.D.D.; T.D. 3,482 ft.; U.R. 8-in. csg.

Phelps & Coats et al No. 1 Fidelity Life Ins. Co., SE SW NW sec. 23-1s-12. Drlg. 720 ft.

Prairie Investment Co. No. 1 A. Cobb, SW NE NW sec. 19-3s-11e. Viola, 30 ft.; drlg. 169 ft.

Carter County

Carter Oil Co. et al No. 1 Leon Voorhees, C SE SW sec. 34-5s-2w. Drlg. 6,686 ft.

W. E. Hammond No. 1 J. Rife, SW SE SE sec. 8-5s-1e. T.D. 475 ft.; S.D.

Cotton County

English Drlg. Co. No. 1 Wilson, NW NW SE sec. 7-4s-11w. T. D. 1,514 ft.; S.D.

Harmon County

Lloalke Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. T.D. 2,870 ft.; S.D. for D.P.

Jackson County

C. P. Burnham No. 1 Oliver, NW NW SE sec. 26-1-20w. Granite Wash 1,913 ft.; S.O.; dry 1,930-50 ft.; S.D. 1,980 ft.

W. A. Delaney No. 1 Mock, C NE SW sec. 32-1n-20w. R.U.R.

John Dickson et al No. 1 W. B. Wright, NE NW SE sec. 19-1-19w. T.D. 3,200 ft.; D.&A.

A. H. Jackman No. 1 fee, SW SW SW sec. 27-1s-24w. T.D. 2,685 ft.; fsg.

J. Ben Russell No. 1 Daniel, NW NE SE sec. 13-3-20w. T.D. 578 ft.; set 10-in. csg.

Universal Oil Co. No. 1 R. W. Briscoe, NW SW NE sec. 36-1s-20w. T.D. 3,004 ft.

Jefferson County

A. T. Campbell No. 1 Trout, SE NE NE sec. 6-8s-7w. Sd. 1,525-57 ft.; T.D. 1,-202 ft.; S.D. for csg.

Pearson et al No. 1 Douthitt, NE cor. sec. 24-6s-9w. T.D. 2,202 ft.; S.D.

Johnston County

Equitable O. & G. Co. No. 1 Belisey, NE SW sec. 12-2s-4e. Arbuckle L. 1,552 ft.; drlg. 1,938 ft. in L.

Love County

Amerada Pet. Corp. No. 1-A Westheimer & Daube, SW SE SW sec. 27-6s-2e. T.D. 7,363 ft.; P.B. 2,970 ft.; acidized; swabbed and flowed 959 bbls. from June 12 to 16.

J. B. Russell et al No. 1 Scott, SW SE SW **sec. 29-8s-2e. T.D. 4,968 ft.; taking** down tools.

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,785 ft.; drld. by fish; recemented 8,066 ft.; W.O.C.

Marshall County

Helmerich & Payne No. 1 Taliaferro, NW SE SW sec. 26-5s-5e. T.D. 2,750 ft.; P.B. 1,350 ft.

Pushmataha County

C. W. Whitehead et al No. 1 Misser, SE SW SW sec. 35-3s-18e. T.A.; T.D. 1,-560 ft.

Stephens County

W. G. Endicott et al No. 1 McFatridge, NW NW SW sec. 11-3s-9w. T.D. 1,452 ft.; fsg.

T. H. McCasland No. 1 J. C. Parker, NE NE SW sec. 2-1n-6w. S.D. 2,518 ft.

Tillman County

Rochelle Bernheimer No. 1 Tate, NE NE NW sec. 16-1s-19w. T.D. 265 ft.; W.O.C.

Gulf Oil Corp. et al No. 1 McWilliams, NW SW SW sec. 15-3s-17w. T.D. 3,299 ft.; repairing derrick.

Gulf Oil Corp. No. 1 Wearmouth, SE NW SE sec. 31-1s-18w. Drlg. 4,785 ft.

Johnson, Young & Mitchell No. 1 Dona-hoe, SW NW NW sec. 7-4s-17w. Drlg. 2,505 ft.

Shirley, Clum et al No. 1 Moricle, NW NW SE sec. 16-4s-14w. T.D. 1,331 ft.; S.D.

D. S. Smith No. 1-A Hammill, NE NE NW NW sec. 6-5s-15w. Drlg. 1,700 ft.

KANSAS

Week Ending June 20 (Descriptions are East unless marked otherwise)

Barber County

Sinclair Prairie Oil Co. No. 1 Gentry, NE cor. sec. 1-33-15w. R.U.R.

Barton County

F. E. Bailey et al No. 1 Hammeke, NE NE SW sec. 12-18-12w. Rig.

J. A. Brouk et al No. 1 Keil, SE SE NE sec. 11-16-15w. Drlg. 365 ft.

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. S.D. 63 ft.

Davison et al No. 1 Birzer, SW SE SW **sec. 22-17-12w. Anhydrite 760 ft.; To-**peka 2,770 ft.; S.D. 3,250 ft.

G. H. Rose and W. H. Lant No. 1 Re-detzke, NE NW NW sec. 1-16-11w. Drlg. 510 ft.

Rose Spring Drlg. Co. et al No. 1 Rick, SW cor. sec. 1-19-11w. Drlg. 2,285 ft.

Schermerhorn Oil Co. No. 1 Hunter, NE cor. sec. 29-18-15w. K.C. 3,194 ft.; La Motte; Juartzite 3,565-76 ft. T.D.; P.B. 3,534 ft.

Torry & Feaster No. 1 Feist, NE NE SE sec. 29-18-11w. Siliceous L. 3,430-32½ ft.; T.D.; potential; pumped 346 bbls. oil in 18½ hrs.

Wakefield & Johnson No. 1 Bumm, SW SW NE sec. 22-19-12w. Anhydrite 655 ft.; fsg. 2,195 ft.

Butler County

Dalton et al No. 1 Miley, C SW NE sec. 17-27-5. R.U.

Ellis et al No. 1-A Pettit, SE SE NW sec. 21-28-6. Siliceous 3,160-63 ft.; oil and water in hole.

McGinnis et al No. 1 Hinnen, NE NE SW sec. 18-24-4. U.R. 1,890 ft.

Rex & Morris No. 1 Olson, NW SW SE sec. 15-28-6. Drlg. 3,033 ft.

Ed Solomon No. 1 Church, SW NE SE sec. 8-28-5. S.D. 50 ft.

Clark County

Olson & Watchorn No. 1 Morrison, C SE SW sec. 17-32-21w. M.I.M.

Cowley County

Baden Prod. Co. No. 1 Sparks, SE SW NW sec. 35-33-4. Drlg. 2,610 ft.

Benedum-Trees No. 1 Carson, SW SW NW sec. 8-30-4. H.F.W. 3,265-75 ft.; D.&A.

DeGenther Oil Co. No. 1 Holt, NW NW SE sec. 15-30-5. Spd. and S.D.

W. M. McKnabb No. 1 Community, C NE NW sec. 14-34-3. U.R. 2,070 ft.

A. D. Morton et al No. 1 Roger, SE SE NE sec. 1-31-4. S.D. 1,230 ft.

Wakefield et al No. 1 Daniels, SE SW SE sec. 3-30-3. Siliceous 3,123-66 ft.; D.&A.

Decatur County

Winkler & Koch No. 1 Veasey, C NW SE sec. 26-3-26w. Rig.

Edwards County

Stanolind O. & G. Co. et al No. 1 Dono-van, C SE SE sec. 14-26-18w. Anhydrite 1,167 ft.; K.C. 4,028 ft. (cor.); drlg. 4,280 ft.

Ellis County

Albee Oil Co. No. 1 Union Pacific, NE cor. sec. 9-13-20w. Oswald 3,418 ft.; cored 3,468-71 ft. S.S.O. set 7-in. csg. 3,468 ft.; R.U.S.T.

Bradley Oil Co. et al No. 1 Penney-Wann, SE cor. sec. 13-15-20w. Anhy. 1,277 ft.; drlg. 2,875 ft.

Bridgeport Mch. Co. No. 1 Ubert, NE NE NW sec. 12-13-18w. Drlg. 50 ft.

James Brouk et al No. 1 Jacobs, NW NW SE sec. 31-15-16w. R.U.

Empire O. & R. Co. No. 1 Heri, SE cor. sec. 22-15-19w. Anhydrite 1,135 ft.; Fsg. 2,535 ft.

Empire O. & R. Co. No. 1 Samuelson, NE NE SE sec. 31-11-16w. Rig.

Bridgeport Machine Co. et al No. 1 Madden Est., NE NW NW sec. 26-15-18w. Anhy. 1,150 ft.; Topeka 2,935 ft.; C.O. 3,325 ft.

Harris & Haun et al No. 1 Schmeidler, SE SE SW sec. 3-13-17w. Oswald 3,274 ft.; T.D. 3,362 ft.; 1,600 ft. oil in hole.

Jones & Shelbourne No. 1 Gunther, SE SE SW sec. 9-11-19w. S.D. 850 ft.

Jones Bros. & Carpenter et al No. 1 Solomon, SE SE SW sec. 28-11-19w. Anhydrite 1,408 ft.; Oswald 3,340 ft.; Siliceous 3,629 ft.; oil rose 3,100 ft. in hole; no test.

Kansas Dev. Corp. No. 1 Haller, SE SE NW sec. 10-11-18w. Drlg. 720 ft.

Parrish & Denman No. 1 Walter, SE SW SE sec. 14-13-17w. Anhydrite 1,152 ft.; U.R. 2,740 ft.

Philhan Oil Co. No. 1 Gerstner, SW SW SE sec. 24-14-17w. Spudded.

J. E. Trigg et al No. 1 Armbrister, SE SE SW sec. 6-11-19w. T.D. 125 ft.; W. O.C.

Twin Drlg. Co. No. 1 Copeland, NE NE SW sec. 26-14-19w. Anhydrite 1,350 ft.; Siliceous 3,704-10 ft.; 2,125 ft. O.I.H. in 12 hours.

Twin Drlg. Co. et al No. 1 Schmidt, SW SW SE sec. 22-15-17w. R.U.

Vickers Pet. Co. No. 1 Kraus, SW SW NW sec. 22-14-19w. Anhy. 1,390 ft.; Oswald 3,420 ft.; set 8-in. csg. 3,444 ft.; R.U.S.T.

Wolf Creek Oil Co et al No. 1 Polifka, SW SW NE sec. 24-13-18w. B.R.

Ellsworth County

Roy Ramsey et al No. 1 Gregory, SW SW SE sec. 25-16-9w. Spudded.

York State Oil Co. No. 1 Koestle, NW NW SE sec. 12-17-9w. Spudded.

Finney County

Heimerich & Payne No. 1 Jones, C SE sec. 34-26-34w. Spudded.

Lone Star State Drlg. Co. No. 1 Hamlin. SW SW NE sec. 31-24-34w. T.D. 2,700 ft.; 750,000 ft. gas; comp.

Graham County

Noah & Young No. 1 Hills, NW SE SE sec. 19-10-21w. Rig.

Vickers Pet. Co. and Phillips Pet. Co. No. 1 Hutton, NE NE SE sec. 29-8-22w. Anhydrite 1,805 ft.; K.C. 3,473 ft.; G.S.O. &W. 3,478-83 ft.; U.R. 3,482 ft.

Greenwood County

Estes et al No. 1 Edgar, NW NW SE sec. 1-28-8. Fsg. 1,030 ft.

Ward McGinnis No. 1 Lampe. NW NE SW sec. 26-24-8. Drlg. 1,240 ft.

Harper County

Marathon Oil Co. No. 1 Zellers, C SW NW sec. 17-35-8w. Wilcox sand 5,320 ft.; S.O. and gas, salty taste; T.D. 5,410 ft.; P.B. 4,400 ft.; whipstock 4,625 ft.; drlg. by, 4,786 ft.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Set 8-in. csg. 2,870 ft.; C.O.

Phillips Pet. Co. No. 1 Kaufman, NE NE NW sec. 2-22-2w. Bld. rig.

Haskell County

Heimerich & Payne et al No. 1 Larson, C SE sec. 28-28-32w. Rig.

Heimerich & Payne No. 1 Meredith, C SW sec. 10-30-32w. Loc.

Kuhn Bros. et al No. 1 Nilson, SW SW SE sec. 21-28-32w. Set 6-in. csg. 2,409 ft.; R.U.S.T.

Kingman County

D. R. Lauck et al No. 1 Prather, C SE sec. 18-27-8w. Chat. 4,039 ft.; drlg. 4,141 ft.

D. R. Lauck et al No. 1 Skilling, C E½ E½ SW sec. 33-27-8w. O.W.D.D.; drlg. 4,533 ft.

Oklahoma Oil Corp. et al No. 1 Reeves. NW cor. sec. 29-27-5w. Chat 3,740 ft.; Misener, 4,103 ft., fshg.

Meade County

Pacific Midwest Oil Co. No. 1 Rexford. NE SE SW sec. 8-20-29w. M.I.M.

McPherson County

Empire O. & R. Co. No. 1 Cunningham. SE cor. sec. 26-18-1w. Chat 2,803 ft.; T. D. 2,832 ft.; P. 27 bbls. in 5 hrs.; set 8-in. csg. 2,824 ft.

Hawkins et al No. 1 Ritikofer, NE NE SE sec. 2-20-10w. R.U.

T. C. Johnson, et al No. 1 A. R. Johnson, SW SW NW sec. 33-17-1w. Drlg. 2,425 ft.

Ness County

Continental Oil Co. No. 1 Thompson, C E½ E½ SW sec. 13-18-26w. Siliceous and S.O. 4,446-50 ft.; T.D. 4,462 ft.; acidized; potential, 557 bbls.

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. Spd. and S.D.

Reno County

Dickey Oil Co. No. 1-A Shepherd, NE NE NW sec. 23-26-9w. Chat 3,870 ft.; wtr., 4,161 ft.; P.B. 4,135 ft.; T.D. 4,158 ft.; acidized; pmpd. 35 bbls. fluid, mostly wtr.; C.O.

Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. S.O. 3,874 ft.; H.F.W. 3,-925 ft.; S.D. 2,948 ft.

Graham et al No. 1 Miller, NE NE SE sec. 36-25-10w. Rig.

Miller et al No. 1 Detter, NE SE NW sec. 28-22-7w. Drlg. 385 ft.

Pryor & Lockhart et al No. 1 Kerr, C NW sec. 23-23-8w. Rig.

Rose Spring Drlg. Co. No. 1 Swansen. NE NE NW sec. 1-23-5w. Drlg. 2,000 ft.

Rice County

Beardmore et al No. 1 Fuller, SW SW SE sec. 23-18-7w. K.C. 2,777 ft.; Cong. 3,-111-89 ft.; S.D. 3,340 ft.

Day No. 1 Mason, NW NE NE sec. 28-21-7w. Chat 3,388-3,400 ft.; T.D. 3,431 ft.; est. 20 B.P.D.

Gilmac Oil Co. No. 1 Sargent, SE cor. sec. 31-18-6w. Drlg. 2,915 ft.

Gulf Oil Corp. No. 1 Steckel, SW cor. sec. 30-19-10w. Set 10-in. csg. 150 ft.

Permian Oil Co. No. 1 Monroe, C NE NE sec. 9-20-7w. Set 10-in. csg. 2,114 ft.; S.D. 2,605 ft.

Saco Oil Co. et al No. 1 Haxton Est., NW NW NE sec. 30-19-8w. Loc.

Sage et al No. 1 Patton, SW cor. sec. 5-21-7w. Rig.

Shell Pet. Corp. et al No. 1 Hafermann, C N½ N½ SE sec. 6-19-9w. Siliceous 3,192 ft.; swabbed 192 bbls. oil in 5 hrs.; H.F.O.

Shell Pet. Corp. No. 1 Maughlin, NE NW SE sec. 11-20-8w. Siliceous 3,235-38 ft.; 36,500,000 ft. gas at 3,260 ft.; fshg. at 3,294 ft.

Simpson & Noble et al No. 1 Pulliam, C S½ N½ NE sec. 35-19-8w. K.C. L. 3,-846 ft.; Viola 3,189 ft.; Simpson, 3,210 ft. Fsg. 3,252 ft.

Simpson & Noble and Stanolind O. & G. Co. No. 1 Bowman, SW SW NW sec. 22-19-10w. Anhy. 438 ft.; Siliceous 3,286-94 ft.; saturated core; R.U.S.T.

Skiles et al No. 1 Stout, SE cor. sec. 6-21-9w. Siliceous 3,369 ft.; 5-in. liner at 3,373 ft.; S.O.&W.

Rooks County

Hartman & Blair et al No. 1 Hall, NW cor. sec. 25-10-17w. Drlg. 670 ft.

Heimerich & Payne et al No. 1 Bedard, C NE sec. 29-9-19w. Drlg. 3,385 ft.

L. C. D. Drlg. Co. et al No. 1 Westhusin, C NE SE sec. 11-9-17w. Drlg. 520 ft.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. S.D. 2,714 ft.

Murfin et al No. 1 Wasthusin, NE NE SE sec. 19-9-16w. S.D. 3,335 ft.

J. A. Shoemake No. 1 Stebbins, NE NE SW sec. 26-7-17w. Anhy. 1,130 ft.; drlg. 1,325 ft.

Skaer Oil Corp. et al No. 1 Dryden, NE cor. sec. 28-10-17w. Drlg. 3,050 ft.

Trees Oil Co. No. 1 Minx, SW cor. sec. 31-10-18w. Loc.

Rush County

Boyle & Grossman No. 1 Wilson, NE cor. sec. 33-17-19w. Drlg. 3,330 ft.

Ira Keith et al No. 1 Dartmouth Savings Bank, SW SW NE sec. 3-17-18w. Oswald 3,335 ft.; drlg. 3,525 ft.

National Ref. Co. No. 1 Werth, NW NE NE sec. 7-16-18w. Anhydrite 1,195 ft.; Oswald 3,328 ft.; T.D. 3,572 ft.; acidized; Pot. 444 bbls. oil, 2 per cent water; pumped 100 bbls. oil and 100 bbls. water third day; drlg. 3,615 ft.

Pryor & Lockhart et al No. 1 Stegman, SW NW NE sec. 11-16-17w. Anhydrite 1,095 ft.; drlg. 3,405 ft.

Russell County

Armer et al No. 1 Maier, NE NW NE sec. 20-15-14w. C.O. 545 ft.

R. G. Berry et al No. 1 Cook, NE NE SE sec. 19-11-13w. Oswald 3,097 ft.; conglomcrate 3,412 ft.; Siliceous 3,532 ft.; U.R. 3,635 ft.

Central Pet. Co. No. 1 Benso "C," SE SE SW sec. 9-14-15w. Granite 3,308-13 ft.; P.B. 3,120 ft.; pulled 5-in. csg.

Darby Pet. Corp. and Continental Oil Co. No. 1 Letsch, SE NE NW sec. 34-14-13w. Granite wash 3,238 ft.; granite 3,262-65 ft.; P.B. 2,880 ft.; acidized; Pot. 419 bbls.; comp.

Eisenhour & Shaffer No. 1 Humes, SW SW SW sec. 6-14-12w. Siliceous 3,376 ft.; T.D. 3,407 ft.; S.D.

Hartman & Blair No. 1 Johnston. NW cor. sec. 11-13-14w. Anhydrite 690 ft.; drlg. 1,600 ft.

Hartman & Blair No. 1 McAllister, SW SW SE sec. 24-13-15w. Anhydrite 940 ft.; Oswald 3,053 ft.; H.F.W. 3,080-83 ft.; U.R. 3,125 ft.

Lario O. & G. Co. et al No. 1 Steinert, NE NE SW sec. 21-15-15w. Anhy. 875 ft.; drlg. 1,714 ft.

Lee & Reser No. 1 Penix, SW SW SE sec. 13-14-13w. R.U.

R. C. Tarrant No. 1 Williamson, SE SE NW sec. 9-14-14w. Tarkio L. 2,515 ft.; T.D. 2,550 ft.; swbd. 8 B.P.H. and showing of wtr.; acidized with 1,000 gals.; made potential of 243 bbls. of oil.

Wakefield et al No. 1 Krug, NE NW SW sec. 7-15-14w. Anhy. 845 ft.; set 6-in. csg. 2,885 ft.

Saline County

James Brouk et al No. 1 Othelander, NE NW SE sec. 10-16-3w. Spudded and S.D.

Ryan Consolidated Co. & Archer No. 1 Norton, NE cor. sec. 32-14-2w. M.I.M.

Sedgwick County

Joe Aylward et al No. 1 Harrison, SE SE SW sec. 23-25-2. Drlg. 3,085 ft.

D. R. Lauck No. 1 Parke, SE SE NE sec. 17-25-2. Drlg. 3,450 ft.; H.F.W.

Earl Wakefield et al No. 1 Howard, SE SE NE sec. 25-25-2. Rig.

Seward County

Heimerich & Payne No. 1 Hyde, C SW sec. 14-31-34w. M.I.M.

Sumner County

Craft & Wilson No. 1 Nevitt, NE NW NE sec. 36-32-2e, Stalnaker 2,223 ft.; K.C. L. 2,608 ft.; drlg. 3,406 ft.

D. L. Husted et al No. 1 Evers, SE SE NE sec. 27-31-2. Set 12-in. csg. 412 ft.

Matthews & Derrington No. 1 Berry, NW NW SE sec. 14-35-1. Drlg. 3,155 ft.

Pryor & Lockhart et al No. 1 Knowles, SW cor. sec. 30-30-1. K.C. L. 2,858 ft.; Chat 3,499 ft. (cor.); drlg. 4,010 ft.

E. B. Shawver No. 1 Judd, SW SE NE sec. 3-34-2. Set 10-in. csg. 1,908 ft.

Texas Co. No. 1 Reed, NE SE SE sec. 11-31-1w. Drlg. 2,675 ft.

D. J. Wilson et al No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW sec. 16-35-1w. Drlg. 4,350 ft.

Trego County

Central Commercial No. 1 Wagg, NW NW SE sec. 17-13-21w. K.C. L. 3,548 ft.; bld. 10 bbls. oil in 8 hrs. at 3,950 ft.; S.D. 4,273 ft.

J. J. Hall et al No. 1 Deines, SE SE SE sec. 12-13-24w. Drlg. 1,775 ft.

Woodson County

N. C. Dunn No. 1 Dawson, C NW NE sec. 27-26-13. L. 1,505 ft.; T.D. 1,527 ft.; P.B. 1,200 ft.; H.F.O.; no test.

Foster et al No. 1 Timm, SE NW NE sec. 36-25-13. Miss. 1,520 ft.; S.D.

Lester et al No. 1 Weidle, NE NE SE sec. 17-25-14. T.D. 1,565 ft.; D.&A.

C. L. Sheedy No. 1 Abbott, NE NE SW sec. 16-25-14. T.D. 1,555 ft.; D.&A.

C. L. Sheedy et al No. 1 Fuhlhage, NE NW SW sec. 27-25-14. Set 6-in. csg. 1,431 ft.

ARKANSAS

Arkansas County

Ark. O. & G. Co. No. 3 Fischer, 250 ft. S, 200 ft. E, NW cor. NE NW sec. 6-4w. Rig; S.D.; W.O.

Bradley County

Phillips Pet. Co. No. 1 C. H. Murphy et al, NW cor. NW NW sec. 12-17-11. Drlg. 2,020 ft. Cmt. 13-in. 740 ft.

Calhoun County

Ben G. Barnett No. 1 Freeman Smith, SE cor. sec. 36-15-14. Drlg. 4,486 ft.

T. R. Brown et al No. 1 Calion Lbr. Co., C S½ SE SW sec. 22-15-15. Drlg. 2,500 ft.

Clark County

Boris Tripanoff, Tr., No. 1 W. Gibbons, sec. 27-8-18. Prep. to set csg. 557 ft.

Columbia County

J. C. Buckbee, Tr., No. 1 Wilson, 330 ft. N and E, C sec. 17-17-18. T.D. 4,510 ft. red beds. T.A.

Crawford County

Carter Oil Co. and Donald Trumbo No. 1 Cradduck, C NW NE sec. 3-11n-30w. Prep. set csg. 1,230 ft.

Dallas County

Kel-Mac Lease & Royalty Co. No. 3 R. Owens, NW cor. NW SW sec. 26-10-16. S.D. 1,924 ft.

Hempstead County

Dixie Drlg. Co. No. 1 Wheatley, 330 ft. S. 30 ft. E, NW cor. SW NE sec. 14-11-26. R.U. and W.O.O.

M. D. Fitzwater No. 2 Lafferty, sec. 17-14-24. S.D. at 2,415 ft.

Murdock-May & Easton No. 1 Conway Est., 330 ft. N and E, SW cor. NW SW sec. 17-14-24. Drlg. and cg. 2,623 ft.

LaFayette County

Erwin & Leach No. 3 Bodcaw Lbr. Co., 330 ft. S and E, NW cor. sec. 20-16-13. T.D. 7,707 ft. Oolitic lime 7,654-98 ft. D.S. test 7,626-98 ft., 24 thribbles s.w. in 12 min. No oil or gas. W.O.

A. M. Neeley No. 1 Meek, 330 ft. S and W, NE cor. NE NW sec. 35-19-25. R.U.

Little River County

Roberts et al No. 1 Hall, sec. 22-13-29. O.W.D.D.; S.D. at 2,050 ft.

Loanoke County

Frank F. Silver et al No. 1 Joe Chambers, C NE sec. 17-2n-7w. T.D. 1,470 ft. S.D.

Miller County

Deep Rock Oil Corp. No. 1 Williams, NW cor. SW NW sec. 6-16-25. Drlg. 3,680 ft.

King Oil Corp. No. 1 G. W. Crank, SW NE sec. 19-26-25. T.A. 3,906 ft.

King Oil Corp. No. 1 Mann, NW cor. NW SE sec. 2-16-26. Drlg. 900 ft.

Ouachita County

Armstrong-Rhoda No. 1 M. Bragg, SE cor. SE NW sec. 25-13-18. Drlg. 1,012 ft.

Carnes & Harrell No. 1 Dunn & Robinson, new loc., 440 ft. S, 440 ft. E, NW cor. NW SE sec. 7-12-19. Drlg. 2,487 ft.

J. E. Crosbie, Inc., No. 6 Sullivant, 660 ft. E, 800 ft. N, SW SE NW sec. 12-17-14. Loc.

J. M. Farriss No. 1 Dean, O.W.D.D. Old T.D. 2,907 ft., abnd. in Dec. 1930. Formerly known as Belmont et al No. 1 Dean, 200 ft. S and W, NE SE NW sec. 16-15-17.

Lion Oil Ref. Co. No. 1 Reynolds, C E½ SE NE sec. 28-15-15. Drlg. 4,704 ft.

L. L. McDonald No. 1 Langley, 330 ft. N and E, SW cor. NE SW sec. 19-15-15. S.D. 2,116 ft.

Phillips Pet. Co. No. 1 Arnold, 660 ft. S and 330 ft. E, NW cor. NE sec. 27-15-15. Drlg. 4,143 ft.

Phillips Pet. Co. No. 1 Cheatham, 660 ft. N and 330 ft. E, SW cor. NE sec. 27-15-15. Drlg. 3,900 ft.

Phillips Pet. Co. No. 1 J. M. Farriss, cen. W½ NW SE sec. 27-15-15. Loc.

Phillips No 1 E. Gette, 660 ft. N and 330 ft. E, SW cor. NE sec. 27-15-15. Drlg. 2,710 ft.

Phillips Pet. Co. No. 1 L. Harriss, 660 ft. N and 330 ft. W, SE cor. SW NE sec. 28-15-15. T.D. 4,869 ft. D.S. stuck.

John Pugh No. 1-A P. T. Hildebrand, 660 ft. N and 330 ft. W, SE cor. sec. 28-15-15. T.D. 4,914 ft. Cored. Will make D.S. test. Show oil and gas.

Standard Oil Co. of La. No. 3-B Reynolds, 660 ft. N and 330 ft. W, SE cor. NW SW sec. 27-15-15. T.D. 4,912 ft. Top lime 4,892 ft. Show oil and gas. Cmt. 8-in. 4,892 ft.

O. F. Whittaker, Tr., No. 1 S. Howard, 600 ft. E and 150 ft. N, SW cor. NW NE sec. 20-12-16. Drlg. 2,475 ft.

Union County

Ark.-Southern Oil Co. No. 1 M. H. Simmons, NW cor. NW NE sec. 15-18-13. Drk.

J. C. Buckbee No. 2 Ezzell, SW cor. NE NW sec. 13-17-15. Cg. 4,668 ft. D.S. test 4,554-68 ft., showed mud and show of oil.

J. E. Crosbie, Inc., No. 1 G. Morris, 340 ft. N and 260 ft. E, SW cor. NW SW sec. 7-17-13. T.D. 3,340 ft. Tst. S.W. Abnd.

Kinnebrow & Simpson No. 1 L. Adams, SW cor. NE NE sec. 12-17-14. T.D. 3,172 ft. T.A.

Marine Oil Co. No. 1 Simmons, 250 ft. S and W, NE cor. SE NW sec. 10-18-13. Drk.

McCressien Oil Co. No. 2 D. Norman, NE cor. NE SE sec. 3-18-13. W.O. jack to pump, 3,556 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo-Rodessa

American Lib. O. Co. No. 1 Norton, 330 ft. S and 330 ft. W, NE cor. sec. 17-23-15. 16-in. 162 ft. Drlg. 5,068 ft.

Ark.-La. Gas Co. No. 13 Rodessa O. & L. Co., 2,330 ft. N and 1,136 ft. W, SE cor. sec. 22-23-16. Drlg. 5,660 ft.

Ark.-La. Gas Co. No. 17 Rodessa O. & L. Co., SE cor. SW NW sec. 23-23-16. T.D. 5,990 ft. Tstg. 7-in. 5,966 ft.

Ark.-La. Gas Co. No. 18 Rodessa O. & L. Co., NW cor. sec. 23-23-16. Drlg. 5,882 ft.

Ark.-La. Gas Co. No. 19 Rodessa O. & L. Co., NE cor. NE SE sec. 22-23-16. Drlg. 4,677 ft.

Ark.-La. Gas Co. No. 20 Rodessa O. & L. Co., NW cor. SW sec. 23-23-16. Drlg. 3,009 ft.

Ark.-La. Gas Co. No. 21 Rodessa O. & Ld. Co., 296 ft. N, 330 ft. E SW cor. sec. 23-23-16. Drk.

Blackwell O. & G. No. 2 Neugent, 330 ft. S and 330 ft. E NW cor. NE SE sec. 8-23-15. 10-in. 2,223 ft. Drlg. 3,078 ft.

S. P. Borden No. 2 K.C.S., NW cor. SW sec. 23-23-16. Drlg. 4,470 ft.

Canadian Oil Co. No. 1 Comegys, SE cor. sec. 10-23-16. Fishing reamer 6,022 ft.

Lacey et al No. 2 Tyson, 487 ft. S, 789 ft. W, NE SE NW sec. 24-23-16. 16-in. set 257 ft.; drlg. 860 ft.

M. H. Marr et al No. 2 Peak, SW cor. SE sec. 11-23-16. Comp. flowing 23 B.P.H. on ½-in. choke. T.D. 6,049 ft., T.P. 265 lbs., C.P. 300 lbs.

R. W. Norton No. 3 Atkins Unit, 175 ft. S, 1,286 ft. W, NE cor. sec. 18-23-16. Drlg. 5,764 ft.

R. W. Norton No. 2 Elder, 330 ft. S and W, NE cor. sec. 23-23-16. Set 9-in. 2,052 ft. Drlg. 5,908 ft.

R. W. Norton No. 3 Foscue Unit, NE cor. sec. 29-23-16. Drlg. 5,792 ft.

R. W. Norton No. 4 Foscue Unit, SE cor. sec. 20-23-16. Core bbl. stuck. Cir. oil and acid, T.D. 5,938 ft.

R. W. Norton No. 5 Foscue Unit, 1,980 ft. S, 660 ft. W, NE cor. sec. 29-23-16. Drk.

R. W. Norton No. 5-A Caddo Lv. Bd., 2,-600 ft. N and 600 ft. W, C sec. 28-23-16. Drlg. 2,518 ft. Hole straight.

R. W. Norton No. 6-A Caddo Lv. Bd., 2,-600 ft. N and 660 ft. W, C sec. 28-23-16. Drlg. 5,681 ft.

R. W. Norton No. 2 N. S. Spearman, 330 ft. S and 660 ft. E, NW cor. SW sec. 18-23-15. Drlg. 5,221 ft.

R. W. Norton No. 4 Tyson heirs, 2,943 ft. N and 3,313 ft. E, SW cor. sec. 13-23-16. T.D. 6,095 ft. Top saturation 6,020 ft. Perf. 7-in. 6,075-79 ft. with 16 shots. Testing.

Phillips Pet. Co. No. 2 Adams, NW cor. NW NW sec. 17-23-15. Comp. flowing 93 bbls. 14 hrs., 13/64 inch tub. choke. T.D. 6,039 ft.

Phillips No. 3 Adams, 815 ft. S and 1,707 ft. E, NW cor. sec. 17-23-16. Drlg. 1,395 ft., 16-in. set 256 ft.

Phillips Pet. Co. No. 5 Norton Est., SW cor. NW sec. 17-23-15. Drlg. 5,767 ft.

Phillips No. 6 Norton Est., 1,664 ft. E and

1,794 ft. S, NW cor. sec. 17-23-15. Drlg. 2,355 ft.

Phillips Pet. Co. No. 1 Robinson, C E½ NE SE sec. 18-23-15. Whipstock at 2,593 ft.; drlg. 4,552 ft.

Phillips No. 1 J. T. Smith, 330 ft. S and 330 ft. W NE cor. SW SE sec. 8-23-16. 10-in. cmt. 2,332 ft. W.O.C.S.

Regent Oil Corp. No. 1 Tyson, 104 ft. S, 104 ft. E NW cor. SE SW sec. 24-23-16, 13-in. 250 ft.; drlg. 3,916 ft.

H. W. Snowden No. 1 Phillips, C Lot 11, Blk. 36, sec. 23-23-16. T.D. 5,347 ft. Recmt. 10-in. at 2,057 ft.

H. W. Snowden No. 3 Phillips, C Lot 7, Blk. 47, Townsite, sec. 23-23-16. 16-in. 229 ft.; drlg. 2,302 ft.

Snowden & Anding No 1 Taylor, C Lot 7, Blk. 46, Townsite, sec. 23-23-16. Reamed straight hole 1,160 ft.

Standard No. 16 Lawton, NE cor. SW NW sec. 14-23-16. Set 7-in. 5,919 ft.; T.D. 5,997 ft.; flwd. 55 B.P.H., 1¾-in. tub. ck.

Standard No. 17 Lawton, 100 ft. N and 764 ft. W, SE cor. NW sec. 14-23-16. Drlg. 5,616 ft.

Standard No. 4-A M. L. Pitts, 330 ft. N and W, SE sec. 11-23-16. T.D. 6,022 ft. 7-in. cmt. 5,862 ft. W.O.C.S.

Simplex Oil Co. No. 3 Natalie, 1,175 ft. N and 200 ft. W SE cor. W½ SE¼, sec. 10-20-15. Drlg. 1,965 ft.

Tri-State O. & G. Co. No. 1 Hall, C Lot 12, Blk. 29, sec. 23-23-16. Drlg. 5,447 ft.

Tri-State O. & G. Co. No. 1 F. L. Westbrook, C Lot 6, Blk. 12, sec. 23-23-16. T.D. 6,000 ft. Milling on 10-in. csg.

United No. 6 Brewer Unit, 1,094 ft. N and 569 ft. E, SW cor. sec. 22-23-16. Drlg. 3,984 ft.

United No. 3 Harris, NE cor. sec. 15-23-16. Drlg. 5,339 ft.

United Gas Co. No. 2 Lindsay Maround Unit, 133 ft. S, 111 ft. W, NE NW NW sec. 24-23-16. Comp. flw. 15 B.P.H. on ¾-in. tbg. choke, 2,000 gal. acid. T.D. 5,989 ft.

United Gas Pub. Ser. Co. No. 1 McCoy, NE cor. **sec. 16-23-16.** 7-in. **5,893 ft.;** flw. 8 B.P.H.; prep. to acidize.

United No. 4 Miller, sec. 14-23-16. Drlg. 5,848 ft.

United No. 2 Mitchell, SW cor. of lse., sec. 20-23-16. Drlg. 5,670 ft.

United No. 5 M. L. Pitts, 312 ft. N and 658 ft. W, SE cor. NW SE sec. 13-23-16. Csg. seat gave way; cmtd. blk. 5,990 ft.; T.D. 6,040 ft. Rng. 5-in. to 6,015 ft.

United No. 7 Pitts, NE cor. SW SW sec. 13-23-16. Comp. flw. 16 B.P.H. on ¼-in. tbg. choke, 1,500 gal. acid. T.D. 6,095 ft.

United No. 8 Pitts, SW cor. of E 28 ac., NE SW sec. 15-23-16. Drlg. 5,103 ft.

United Gas No. 9 M. L. Pitts Unit, 113 ft. N, 111 ft. W, SE SW SW sec. 13-23-16. 13-in. set 330 ft. W.O.C.S.

United No. 3 N. S. Spearman, SW cor. SE NW sec. 18-23-15. Comp. flow. 16 B.P.H. on ¼-in. tbg. choke, T.D. 6,037 ft.

United Gas No. 4 N. S. Spearman Unit, 659 ft. S, 650 ft. W, NE NW sec. 18-23-15. 13-in. cmt. 317 ft. W.O.C.S.

United Gas No. 1 Teamer, 133 ft. S, 111 ft. E, NW NE NW sec. 24-23-16. Drlg.

United Gas No. 6 Thomas Unit, 319 ft. N, 329 ft. E, SW NE NW sec. 23-23-16. Drlg. 2,493 ft.

United No. 10 N. S. Tyson Unit, SW cor. SE SE sec 11-23-16 7-in. Comp. 13 B. P.H. on ¼-in. choke. T.D. 6,030 ft.

United Gas Pub. Ser. Co. No. 22 Rodessa Oil & Land Co., NW cor. sec. 15-23-16. Comp. flw. 12 B.P.H. on ½-in. tbg. choke, T.D. 5,987 ft.

United Gas No. 23 Rodessa O. & L. Co., 319 ft. N, 423 ft. W, SE NW NW sec. 23-23-16. Drlg. 1,458 ft. 16-in. set 318 ft.

United Gas Pub. Ser. Co. No. 2 U. S. Govt., 660 ft. S and 1,166 ft. E, NW cor. of 54 ac., sec. 29-23-16. Drlg. 5,171 ft.

United Gas No. 574-1 fee, 660 ft. N and W SE cor. sec. 16-23-16. R.U.

Grady Vaughn No. 2 Hunter-Derryberry, sec. 14-23-16. T.D. 6,024 ft. Cutting out stk. bailer.

Sabine Parish—Zwolle

Ellis Prod. Co. No. 1 Williams, 330 ft. S and W, NE cor. SE NE sec. 23-7-11. Tested dry; S.D.; W.O. 2,806 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Rondeau et al No 1 Locke, 150 ft. S and 1,495 ft. W, NE cor. sec. 9-15-10. Drk.

A. C. Walters No. 1 D. B. Davis, C SE SW sec. 3-16-9w. Drk.

Bossier Parish

Geo. H. Bringhurst et al No. 1 Buckley, NE SW sec. 36-21-13. T.D. 2,309 ft. Salt water. Abnd.

Geo. H. Bringhurst et al No. 2 Buckley, 1,000 ft. N, 330 ft. W, SE cor. sec. 35-21-13. R.U.

Producers O. & G. Co. No. 1 Webb, C W½ SW sec. 22-17-12. Drlg. 2,700 ft.

Tidwell et al No. 1 Nattin, 300 ft. S and W, C sec. 15-22-14. Set 10-in. 66 ft.; S.D. 1,650 ft.

Triangle Drlg. Co. No. 1-E Skannal, 660 ft. N and 2,640 ft. W, SE cor. sec. 23-17-12. Drlg. 2,000 ft.

United Gas Pub. Ser. Co. No. 1-D H. L. Skannal, 660 ft. S, 561 ft. W, NE cor. SE sec. 22-17-12. Drlg. 3,925 ft.

Caddo Parish

Calatex O. & G. Co. No. 2 Scott, 1,033 ft. W, 807 ft. N, SE cor. sec. 5-16-16. Drlg. 2,695 ft.

Calatex O. & G. Co. No. 2 Hudson, 1,319 ft. N and 913 ft. E, SW cor. sec. 5-16-16. Drk.

Calatex O. & G. Co. No. 1 Whitworth, 700 ft. S and 860 ft. E, NW cor. SW¼ sec. 10-16-16. Drk.

R. E. Dalton No. 1 Noel Est., SW cor. SE SE sec. 4-21-14. 16-in. set 20 ft.

Falcon Oil Co. No. 15 Deckson, NW SE sec. 27-20-15. P.B. 2,343 ft.; old T.D. 2,349 ft.

Hillman et al No. 2 Noel Est., 530 ft. S and 330 ft. W, NE cor. sec. 12-20-16. T.D. 2,171 ft.; prep. set csg.

J. B. Hutchinson No. 2 Storey-Phillips, SW cor. NE NW sec. 28-16-13. Drk.

Kenwood Pool, Ins., No. 1 W. K. Henderson, 1,980 ft. S and 200 ft. E, NW cor. sec. 15-19-15. T.D. 2,436 ft. Dry, abnd.

Bill Morefield et al No. 1 Stokely, 745 ft. S and 100 ft. E, C sec. 5-20-16. R.U.

Morris & McCain No. 1 Hughes. Sec. 16-20-15. O.W.T.A. T.D. 2,207 ft., P.B. 2,257 ft. Tested s.w. Abnd.

Morris & Wooley No. 1 Pender, NW cor. SW sec. 11-20-15. T.D. 2,207 ft.; will run 6-in.

Persian Oil Co. No. 1 J. E. Cupples, 500 ft. S and 350 ft. W, NE cor. sec. 24-16-13. Drk.

Prairie River Synd. No. 1 Hutchinson, 330 ft. N and E, SW NW sec. 15-15-12. Loc.

Press & Lambert No. 1 fee, SW cor. NE SE sec. 10-20-15. Comp.; flowed 200 bbls. per day; T.D. 2,205 ft.

Simplex Oil Co. No. 10 Glasswell, sec. 10-20-15. T.D. 2,200 ft. Pumped 50 B. P.D. Comp.

Sport Oil Corp. No. 1-D Muslow, SE cor. sec. 5-20-15. Cg. 3,690 ft.

Stanolind O. & G. Co. No. 102 Dillon, 330 ft. S and W NE cor. sec. 14-21-15. Drlg. 400 ft.

Stanolind O. & G. No. 103 Dillon, sec. 13-21-15. Drk.

Stanolind O. & G. No. 104 Dillon, sec. 13-21-15. Drk.

United Gas No. 1-A S. R. Wheeler, 1,320 ft. S, 1,500 ft. W, NE cor. sec. 16-18-16. Old T.D. 5,200. Will D.D.

Caldwell Parish

Critchett & Woods No. 1 Kyles, NE cor. SW NE sec. 18-11-3e. P.B. to 1,300 ft.; old T.D. 1,740 ft.; W.O.O.

Critchett & Woods No. 2 La. Cen. Lbr. Co., NW cor. NW SE sec. 18-11-3e. T.D. 1,395 ft.; S.D.

Zeigen No. 6 La. Cen. Lbr. Co., sec. 18-14-3e. Drlg. 1,365 ft.

Catahoula Parish

J. Ray McDermott No. 1 La. Cen. Lbr. Co., 400 ft. S and E, NW cor. sec. 15-10-5e. Drlg. 117 ft.

Claiborne Parish

S. E. Langford et al No. 1 White, cen. S½ NE SW sec. 26-21-8. R.U.

E. T. Oakes No. 1 H. W. Patton, NE cor. sec. 1-20-5. Reaming 4,259 ft.

United Gas Public Service Co. No. 2 Durfett, 660 ft. N and 1,980 ft. E, SW cor. sec. 31-20-5. T.D. 7,663 ft. Fishing 450 ft. of drill pipe.

Concordia Parish

Zeni Oil Co. No. 1 Young, 1,200 ft. W, 100 ft. N, SE cor. sec. 28-6n-8e. S.D. 1,120 ft.

De Soto Parish

J. E. Carlson No. 1 A. P. Garland, 250 ft. S and E, NW cor. SW sec. 7-14-14. R.U.

J. G. Carson No. 1 C. J. McMichael, sec. 26-12-15. Drk.

W. F. Hyde et al No. 1 Ramsey, 330 ft. N and W, C sec. 36-11-11. Drlg. 650 ft.

R. C. Payne No. 1 Harris, sec. 11-13-14. T.D. 1,700 ft. Fish drl. stem.

E. A. Stiller No. 1 Jenkins, 400 ft. S and 200 ft. W, NE cor. NW NE sec. 35-13-12. T.D. 2,490 ft. W.O.S.R.

Grant Parish

Acadian Prod. Corp. No. 8 Swope, 150 ft. S and E, NW cor SE SE sec. 18-9-1e. T.D. 1,581 ft. Set perf. 6-in.

Alexander et al No. 1 Maxwell, sec. 9-9-1e. W.O.S.R. 1,538 ft.

Fred W. Henslee No. 2 Uranin, sec. 7-10-1e. Comp. pump 10 B.P.D. T.D. 1,519 ft.

Al Johnson et al No. 1 Brewster, 150 ft. S and W NE NW NE sec 19-9-1e. R.U.

Perry et al No. 1 Barrett, 150 ft. N and W SE NE SE 17-9-1e. Drlg. 1,396 ft.

W. B. Rhineck, Tr., No. 1 Swope, SW cor. NW SW sec. 16-9-1e. T.D. 1,601. Drlg. plug screen stuck. W.O.

Taw Oil Co. No. 2 Bradford, sec. 16-9-1e. T.D. 1,558 ft. Dry and abnd.

Taw Oil Co. No. 1 Bradford, NE cor. NW sec. 16-9-1e. Set 10-in. 60 ft.; S.D.

Tri-State Lsg. & Dev. Co. No. 1 Ethridge, 600 ft. S and 300 ft. W, NE cor. sec. 19-7-3w. Drlg. 1,170 ft. 10-in. 280 ft.

Jackson Parish

G. W. Zeigen No. 5 La. Cen. Lbr. Co., sec. 13-14-2w. T.D. 1,770 ft.; O.W.D.D.; R.U.

La Salle Parish

Montague Oil Co. No. 7-A Zenonia Lbr. Co., NE cor. sec. 10-9-1e. Tstd. S.W. and W.O. 1,530 ft.

Lincoln Parish

Caldwell Land & Timber Co. No. 1 J. K. Hammons, 330 ft. S and E, NW cor. SE SW sec. 30-18-1w. S.D. 665 ft.

Herman L. Brown et al No. 1 S. Gardner, 230 ft. N, 380 ft. E, SW cor. NW NE sec. 10-17-4w. Cg. 6,445 ft.

Morehouse Parish

J. B. Collins et al No. 1 E. M. Clarke, SE NE sec. 10-20-7e. Drk.

John E. Farrell No. 22 State, 1,646 ft. S and 346 ft. E, NW cor. sec. 33-22-4e. R.U.

John E. Farrell No. 23 State, 1,341 ft. N and 3,547 ft. E, NW cor. sec. 29-22-4e. R.U.

John E. Farrell No. 24 State, 1,493 ft. S and 2,453 ft. E, NW cor. sec. 29-22-4e. R.U.

J. E. Farrell No. 25 State, 971 ft. N, 1,101 ft. E, SW cor. sec. 20-22-4e. Loc.

United Gas Pub. Ser. Co. No. 24 Tensas, 1,330 ft. W and 664 ft. N, SE cor. sec. 3-21-4e. T.D. 2,192 ft. Comp. 5,500,000 ft. gas. R.P. 920 lbs.

United Gas Pub. Ser. Co. No. 25 Tensas, 1,418 ft. W and 1,242 ft. S, NE cor. sec. 29-22-4e. Set 6-in. 2,085 ft. W.O.C.S.

United No. 17 Tensas, 1,320 ft. N and 1,-317 ft. W, SE cor. sec. 26-22-4e. 10-in. set 162 ft.

United No. 18 Tensas, 1,320 ft. S and 1,317 ft. W NE cor. sec. 35-22-4e. Drk.

United No. 23 Tensas, 2,559 ft. W and 1,-339 ft. S, NE cor. sec. 20-22-4e. T.D. 2,187 ft. Comp. 4,000,000 ft. gas, 970 lbs. R.P.

United Gas Pub. Ser. Co. No. 26 Tensas, 1,994 ft. W and 1,101 ft. N, SE cor. sec. 4-21-4e. T.D. 2,171 ft. Comp. 5,000,000 ft. gas, 910 lbs. R.P.

United No. 27 Tensas, 1,288 ft. N and 660 ft. W SE cor. sec. 4-21-3e. Drlg. 1,886 ft.

United No. 28 Tensas, 1,985 ft. W fr. SE cor. NE sec. 3-21-4e. Drk.

United Gas No. 29 Tensas, 267 ft. N, 1,387 ft. W, SE cen. sec. 17-22-4e. Derrick.

United Gas No. 30 Tensas, 1,313 ft. W, 664 ft. S, NE cen. sec. 3-21-4e. Loc.

Natchitoches Parish

C. D. Morrison No. 1 Moffitt, 250 ft. N, 250 ft. W, SE cor. sec. 19-10-10. 10-in. set 110 ft. W.O.C.S. Corrected location: 220 ft. S and 60 ft. W NE cor. sec. 30-10-10.

Red River Parish

Byrd Explo. Co. No. 1 Edge, NE¼, SE¼, sec. 29-13-11. T.D. 2,499. Pumped off, now using vacuum.

Byrd Explo. Co. No. 1 Waller, 1,670 ft. N and 1,520 ft. W, SE cor. sec. 20-13-11. T.D. 2,456 ft. Running 6-inch.

W. J. Hunter et al No. 1 Long Bell Lbr. Co., NE NE sec. 19-13-9. Drlg. 3,050 ft., salt water 2,876-80 ft.

T. G. Shaw No. 1 Teekell, SE cor. SE SW sec. 34-13-10. T.D. 2,830 ft. Tested show O.&G. Now bailing.

Richland Parish

J. S. Morrisey No. 1 Jones, 1,293 ft. N, 636 ft. E, SW cor. sec. 15-18-7e. Coring sdy. sh. 2,025 ft.

Arthur Wray No. 1 Slocum, 2,436 ft. S, 560 ft. W, NE cor. sec. 10-17-6e. Drlg. 2,525 ft.

Sabine Parish

I. J. Allen No. 1 Paul, sec. 24-9-14. R.U. and S.D.

Circle W. Oil Co. No. 1 Cassell, 660 ft. E and 418 ft. S, C sec. 30-9-13. T.D. 1,775 ft.; acidized; bailing to test.

M. C. Forsman No. 1 Patrick, NE SW sec. 21-9-13. Tested some oil; will D.D.; T.D. 1,553 ft. S.D.

F. G. Cox No. 1 Whitney Corp., C NW NE sec. 8-9-13. T.D. 3,234 ft. 9-in. set 3,230 ft.

Hunter Co. No. 39 4-L Co., sec. 33-8-11. T.D. 2,325 ft. Cmt. 6-in. at 2,317 ft.

Pearl Oil Co. No. 6 Crawford, C SE SE sec. 20-9-13. T.D. 3,472 ft. D.S. test 3,100-3,472 ft. Dry. S.D. W.O.S.

J. R. Keen No. 1 Long Bell, 276 ft. N and 288 ft. W, SE cor. NE SW sec. 4-22-3e. Set 8-in. 1,645 ft.

O. S. McKnelly No. 3 Henderson, sec. 29-9-13. Drk.

A. C. Scott No. 1 Bowman Hicks, 660 ft. S and 330 ft. E, NW cor. NW SW sec. 23-9-13. T.D. 1,700 ft. Ara. swab. tubing.

Claude H. Smith No. 1 Whitney Corp., 330 ft. S, 990 ft. W, NE cor. sec. 19-10-13. S.D. 3,150 ft.

A. H. Tarver No. 2 Baker, NW cor. NE sec. 36-8-12. D.S. stuck 5,200 ft.

Tensas Parish

H. M. Jones et al No. 1 Chicago Mill & Lbr. Co., NE cor. sec. 30-12-10e. T.D. 730 ft.; cmtd. 8-in. 706 ft.

H. M. Jones et al No. 1 fee, SE SE 32-12-10e. R.U.

Union Parish

Boucher & Pace No. 1 Frost-Johnson, NE NE sec. 27-21-1e. T.D. 4,515 ft.; S.D.; negotiating to D.D.

Innerstate Natural Gas Co. No. 47 fee, 2,076 ft. S, 660 ft. W, NE cor. **sec. 22-20-3e.** T.D. 750 ft. Cmt. 8-in. 750 ft.

Innerstate Natl. Gas Co. No. 48 fee, 676 ft. N, 1,884 ft. W, SE sec. 27-21-3e. Loc.

Southern Carbon Co. No. 10 Grayling, 1,-261 ft. N and 660 ft. E, SW cor. **sec. 9-21-4e.** R.U.

United Carbon Co. No. 4 Stovall, 1,698 ft. E and 2,201 ft. N, SW cor. sec. 33-21-4e. Drlg 1,889 ft.

Webster Parish

J. H. Edwards No. 1 Hooper, 330 ft. S and E, NW cor. SW sec. 8-17-9. T.A. 3,016 ft.; S.D.

J. P. Evans et al No. 1 T. Crichton, NE SE sec. 35-18-9. T.D. 5,589 ft.; gas 80,-000,000 to 100,000,000 ft.; distillate 16 B.P.D.; tstg.

Red Hawk Oil Co. No. 1 Mayfield, sec. 9-23-9. 10-in. set 90 ft.; W.O.C.S.

Ohio Oil Co. No. 1 R. L. Holloway, 660 ft. S, 760 ft. W, C sec. 23-21-10. T.D. 8,369 ft. Conditioning mud as gas giving trouble.

L. R. Skidmore No. 1 Barnett, sec. 29-17-9. Set 12-in. 65 ft. W.O.C.S.

SOUTH LOUISIANA FIELDS

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 12 State-Bay St. Elaine, sec. 20-22s-18e. Drlg. sh. 4,180 ft.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 32 Watkins, sec. 7-12s-12w. Abd.; salt 4,645 ft.

Shell Pet. Corp. No. 34 Watkins, sec. 7-12s-12w. Dredging canal to loc.

Caillou Island—Terrebonne Parish

Texas Co. No. 36 State. T.D. 6,117 ft.; P.B. 2,508 ft.; sdtk. at 2,526 ft. Drlg. stky. sh. 3,572 ft.

Texas Co. No. 42 State, sec. 47-23s-20e. T.D. 3,926 ft.; P.B. 2,800 ft.; sdtkd. at 2,854 ft.; sd. S.O. 3,822-26 ft.; to run electrical cg. test.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 13 School Land, sec. 16-14s-13w. T.D. 5,924 ft.; no report.

Burton Sutton No. 14 School Land, sec. 16-14s-13w. Drk.

Burton-Sutton No. 3-A School Land, sec 16-14s-13w. T.D. 3,951 ft.; P.B. and sdtkd. at 3,808 ft.; no report.

Humble-Magnolia No. 17 Cameron Meadows, sec. 21-14s-13w. Rig.

Cheneyville—Rapides Parish

Texas Co. No. 1 Weihl, sec. 53-1s-2e. T.D. 5,677 ft.; top oil sd. 5,658 ft.; 7 min. D.S.T. from 5,638-77 ft., ⅝-in. choke on top, ¼-in. on bottom, made 11 bbls. P.L.O., 475 lbs. pressure, cmtd. 7-in. csg. at 5,645 ft.

Choctaw Dome—Iberville Parish

Standard Oil Co. No. 8 Myrtle Grove Wilbert, sec. 52-9s-11e. T.D. 5,828 ft.; P.B. to 2,450 ft. and drlg. sdtkd. hole.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-10s-2e. Drk.

Humble O. & R. Co. No. 7 Gumble. Drlg. sh. 4,650 ft.

Fausse Point—Iberia Parish

Texas Co. No. 2 State, sec. 35-11s-8e. Drlg. stky. sh. 2,794 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 3 State, sec. 5-22s-16e. T.D. 7,613 ft.; P.B. and sdtkd. at 5,010 ft.; drlg. sdy. sh. 6,102 ft.

Garden Island—Plaquemines

Texas Co. No. 19 Garden Isle, sec. 37-23s-33e. T.D. 4,841 ft.; P.B. and drlg. in sdtkd. hole 4,690 ft.

Gillis—Calcasieu Parish

R. Dobbs et al No. 1 Buhler, sec. 11-9s-8w. Sd. 5,210-64 ft.; cmtd. 7-in. csg. on bottom 5,264 ft.

Fohs Oil Co. No. 11 O. H. Castle, sec. 13-9s-8w. T.D. 7,068 ft.; 7-in. csg. on bottom.

Fohs Oil Co. No. 1 Henry Powers, sec. 14-9s-8w. W.O.C. 1,468 ft.

Texas Co. No. 10 Nickerson fee, sec. 12-9s-8w. Drk.

Union Sulphur Co. No. 7 Barbe, sec. 11-9s-8w. Drlg. gumbo 3,915 ft.

Union Sulphur Co. No. 1 G. S. Cole, sec. 12-9s-8w. Rng. screen to test.

Union Sulphur Co. No. 1 Green Acres, sec. 11-9s-8w. T.D. 7,659 ft.; P.B. to 4,-450 ft.; drlg. in sdtkd. hole 5,076 ft.

Union Sulphur Co. No. 15 State, sec. 12-9s-8w. Drk.

Hackberry—Cameron Parish

Gulf Oil Corp. No. 21 Irwin, sec. 12-12s-10w. Rig.

Pure Oil Co. No. 1 "A" Duhon. Setting up.

Stanolind O. & G. Co. No. 16-A School Ld., sec. 16-12s-12w. Drlg. sh. 5,286 ft.

Stanolind O. & G. Co. No. 23-B Gulf Land, sec. 14-12s-10w. Drlg. 1,820 ft.

Texas Co. No. 21 State, sec. 12-12s-10w. Drk.

Texas Co. No. 19-B State, sec. 13-12s-9w. T.D. 6,724 ft.; P.B. to 4,638 ft.; sdtkd.; drld. to 5,307 ft.; P.B. and sdtk. 4,928 ft.; T.D. new hole 5,070 ft. fishing.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 2 Banta, sec. 40-13s-9e. No report.

Herton Oil Co. No. 4 Banta, sec. 40-13s-9e. No report.

Herton Oil Co. No. 1 Carter, sec. 38-13s-9e. T.D. 9,602 ft.

Jennings—Acadia Parish

Reed Crude Oil No. 10 Heywood, sec. 41-9s-2w. T.D. 1,255 ft.

Shell Pet. Corp. No. 1 Conover, sec. 40-9s-2w. T.D. 7,545 ft.; 8-min. D.S.T. 7,-530-45 ft.; recovered 20 bbls. oil.

Stanolind O. & G. Co. No. 1 Calcasieu Natl. Bank, 13⅜-in. csg. at 2,150 ft.

Stanolind O. & G. Co. No. 16 Houssiere-Latrielle, sec. 47-9s-2w. T.D. 7,052 ft.; cutting and pulling stuck drill stem.

Lafitte—Jefferson Parish

Texas Co. No. 4 Lafitte, sec. 30-17s-24e. T.D. 9,420 ft.; cd. sd.; S.O. from 9,371-86 ft.; to run electrical cg. test.

Texas Co. No. 4 Rigolettes Fur Co., sec. 29-17s-24e. Drlg. sh. 9,176 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre State. Drlg. hd. sd. 6,883 ft.

Texas Co. No. 40 State, sec. 36-21s-19e. T.D. 3,783 ft.; O.S.; strks. sd. and l.; to run electrical cg. test.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 5 LaFourche Basin Levee Bd., sec. 11-18s-25e. T.D. 5,100 ft.; P.B. 3,450 ft.; drlg. rock 3,575 ft.

Leesville—LaFourche Parish

Delta Oil Co. No. 1 Constantine, sec. 34-21s-22e. T.D. 5,043 ft.; 7-in. csg. at 5,009 ft.; S.D.

Lincoln Oil Co. No. 9 State, sec. 34-21s-2e. Rig.

Texas Co. No. 48 Leesville, sec. 27-21s-32e. Drk.

Texas Co. No. 53 L.L.&E., sec. 34-21s-22e. Drlg. hd. sdy. sh. 3,458 ft.

New Iberia—Iberia Parish

Kitos Oil Co. No. 3-A Sealey, sec. 56-12s-7e. T.D. 4,560 ft.; P.B. to 3,200 ft.; S.D.

Teche Oil Co. No. 1 Schwing, sec. 52-12s-7e. P.B. and sdtkd.; no report.

Roanoke—Jefferson Davis Parish

Gulf Oil Corp. No. 2-B Anding, sec. 2-9s-4w. Sd. 8,723-32 ft.; rng. csg.

Humble O. & R. Co. No. 4-B Devilbiss, sec. 11-9s-4w. Drlg. sh. 8,651 ft.

Shell Pet. Corp. No. 3 Carter, sec. 1-9s-4w. Drlg. sh. 7,410 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 2 Colmier, sec. 4-6s-5e. Drlg. sdy. l. 5,360 ft.

Texas Co. No. 1 Futral, sec. 20-4s-5e. T.D. 5,997 ft.; P.B. and sdtkd. fish 3,-570 ft.; drld. to 3,622 ft. in sh.; D.&A.

Texas Co. No. 1 Lahaye, sec. 4-6s-5e. Drlg. hd. sd. 4,626 ft.

St. Martinville—St. Martin Parish

Continental Oil Co. No. 1 fee, sec. 18-11s-6e. T.D. 3,150 ft.; P.B. to 7,300 ft.; W.O.C.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-12s-4e. Derrick.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 826 fee, sec. 29-9s-10w. T.D. 3,400 ft.; I.P. 200 B.P.D.

Union Sulphur Co. No. 830 fee, sec. 29-9s-10w. Drk.

Tepetate—Acadia Parish

Continental Oil Co. No. 1 Doris Fruge, sec. 28-7s-2w. Drlg. sh. and shells 6,-370 ft.

Continental Oil Co. No. 4 Homeseekers, sec. 39-7s-2w. T.D. 8,320 ft.; I.P. 111 bbls. in 7½ hrs.; 3/16-in. ck.; C.P. 1,-250 lbs.; T.P. 1,150 lbs.

Continental Oil Co. No. 2 Ortego, sec. 28-7s-2w. T.D. 8,312 ft.; I.P. 580 B.P.D.

Vinton—Calcasieu Parish

Vinton Pet. Co. No. 1 fee, sec. 34-10s-12w. No report.

White Castle—Iberville Parish

Shell Pet. Corp. No. 3 Shingle, 650 ft. S. 600 ft. E of NW cor. sec. 12-11s-12e. T.D. 6,074 ft.; sdy sh.; fsg.

S. LOUISIANA WILDCATS

Acadia Parish

Magnolia Pet. Co. No. 1 Homeseekers Dev. Co., sec. 54-10s-1w. Drlg. hd. sh. 9,184 ft.

Allen Parish

Humble O. & R. Co. No. 2 Bell est., 933 ft. N and E, sec. 28-6s-7w. T.D. 3,004 ft.; 13⅜-in. csg. at 2,955 ft.; W.O.C.

Avoyelles Parish

Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

Buhler Oil Co. No. 2 Faiszt, sec. 26-8s-10w. Old T.D. 4,412 ft.; P.B. to 2,000 ft.; sdtkd.; no report.

Cameron Parish

Magnolia Pet. Co. No. 1 Hebert, sec. 13-12s-9w. Sd. S.O. 8,606-18 ft.; cmtd. csg. 8,603 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. R.U.

East Feliciana Parish

East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. in clay.

Iberia Parish

Jefferson Lake Oil Co. No. 1 State, Twp. 12s-5e. T.D. 8,610 ft.; P.B. to 8,482 ft.; perf. from 8,460-66 ft.; P.B. to 8,183 ft.; P.B. again and milling out at 5,670 ft.

Jefferson Lake Oil Co. No. 322 State Lake Pleigneur. T.D. 5,690 ft.

Texas Co. No. 1-B State, Vermillion Bay, sec. 20-15s-6e. R.U.

Jefferson Davis Parish

Shell Pet. Corp. No. 1 Lacassine, sec. 20-11s-5w. T.D. 9,844 ft.; S.D.; hd. sd.

Stanolind O. & G. Co. No. 1 C. E. Britt, sec. 15-10s-3w. 13⅜-in. csg. 2,150 ft.

Strake Oil Corp. No. 1 Onezia Miller Est., sec. 7-9s-5w. Drlg. sh. 7,012 ft.

Livingston Parish

Bunte O. & G. Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

St. Bernard Parish

John Cartwright No. 1 Meraux Nunes, sec. 19-13s-12e. No report.

St. James Parish

Shell Pet. Corp. No. 1 Colonial Sugar, sec 5-12s-5e. T.D. 7,522 ft.; top salt 7,492 ft.; P.B. to 2,690 ft.

St. Martin Parish

Texas Co. No. 2 State, sec. 14-10s-9e. Drlg. hd. sh. 6,358 ft.

Texas Co. No. 8 St. Martins Land, sec. 17-8s-7e. T.D. 8,213 ft.; D.S. stuck; sdtkd. at 7500 ft.; no report.

Terrebonne Parish

J. B. Beck et al No. 1 Realty Operators, sec. 103-17s-17e. W.O.C. 675 ft.

Humble O. & R. Co. No. 1 Continental Land & Fur Co., sec. 30-17s-14e. Drlg. sh. 3,000 ft.

Vermillion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. Drlg. hd. sh. 9,616 ft.

Del-Shell Exploration Co. No. 1 Landry heirs, sec. 1-13s-4e. Drlg. sh. 1,320 ft.

Louisiana Land & Expl. Co. No. 1 La. Fur Co., sec. 16-15-1e. Bldg. foundations.

TEXAS

Week Ending June 20

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 3-B Machemehl, Wm. Smeathers Sur. T.D. 4,110 ft.; 7-in. csg. at 4,046 ft.

Humble O. & R. Co. No. 5 Sanders (W.O.). Drlg. sh. 4,006 ft.

Hastings—Brazoria County

Humble O. & R. Co. No. 5 C. A. Cannon, H.&T.B. Sur., sec. 36. Drlg. sh. 5,735 ft.

Stanolind O. & G. Co. No. 5 Drake, H.T.&B. Sur. No. 26. Drlg. sd. 5,617 ft.

Stanolind O. & G. Co. No. 3 Ford, A.C.H.& B. Sur. No. 1. Drlg. sd. 6,060 ft.

Stanolind O. & G. Co. No. 1 Reichardt, H.T.&B. Sur. No. 29. Drk.

Stanolind O. & G. Co. No. 1 Rosmussen & Moore, Moore and Rasmussen Sur. Drlg. sh. and shell 1,968 ft.

Stanolind O. & G. Co. No. 6 Shaw, H.T.&B. Sur. No. 36. Drk.

Stanolind O. & G. Co. No. 6 Turner, A.C. H.&B. Sur. No. 1. T.D. 6,069 ft.; drlg. plug.

Stanolind O. & G. Co. No. 5 H. G. Williams, A.C.H.&B. Sur. T.D. 6,080 ft.; 7-in. csg. at 6,060 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 1 Armstrong Plantation fee, Polly and Chance Sur. T.D. 5,550 ft.; sh. and l.; 9⅝-in. csg. on bottom.

Manvel—Brazoria County

Texas Co. No. 5 A.R.G.C. Co. T.D. 4,048 ft.; 7-in. 4,038 ft.; swbg.

Texas Co. No. 24-B Belcher, H. M. Little Sur. Drlg. sd. 5,150 ft.

Texas Co. No. 22 Houston Oil Field Assn., A.C.H.&B. Sur. No. 1. Drlg. stky. sh. and l. 4,571 ft.

Texas Co. No. 4 Lieder (D.D.) T.D. 4,022 ft. in sd.; 7-in. csg. at 3,971 ft.; swbg.

Texas Co. No. 2 Smith, H.T.&B. Sur. P.B. to 4,054 ft., perforated with 40 shots from 4,045-51 ft.; est. 100 B.P.D.; shut in to install gas lift.

Stratton Ridge—Brazoria County

Warner Oil Co. No. 3 Dannenbaum, J. D. Grace Sur. S.D. at 1,280 ft.

West Columbia—Brazoria

Texas Co. No. 13 Abrams, George Tenille Sur. Drlg. l. and sdstne. 3,270 ft.

Texas Co. No. 85 Hogg, Geo. Tenille League. Drlg. gbo. and l. 1,190 ft.

Heyser—Calhoun County

Humble O. & R. Co. No. 2 Welder, Jose Maria Rios Sur. Drlg. sh. 3,816 ft.

Anahuac—Chambers County

Gulf Oil Corp. No. 3 Knowles. Rig.

Humble O. & R. Co. No. 8 J. E. Broussard, H.&T.C. Sur., sec. 63. Drlg. sh. 7,000 ft.

Humble O. & R. Co. No. 6 H. A. Gripon, H.&T.C. Sur., sec. 48. Drlg. sh. 4,407 ft.

Humble O. & R. Co. No. 2 C. C. Johnson, H.&T.C. Sur., sec. 49. 10¾-in. csg. at 1,540 ft.

Humble O. & R. Co. No. 2 C. A. Lord. H.&T.C. Sur., sec. 50. T.D. 6,800 ft.; W. O.C.

Humble O. & R. Co. No. 17 Middleton, H. T.&C. Sur. T.D. 7,235 ft.; I.P. 18 B.P.H.; ¼-in. ck.

Humble O. & R. Co. No. 21 Middleton, H. &T.C. Sur., sec. 56. D.&A. 7,151 ft.

Humble O. & R. Co. No. 8 Tyrell, H.T.& C. Sur. Sand 7,000-82 ft., 7-in. csg. at 7,043 ft.; I.P. 28.38 B.P.H.; T.P. 1,075 lbs.; C.P. 1,050 lbs.

Humble O. & R. Co. No. 11 White, James McGahey Sur. T.D. 7,082 ft.; W.O.C.

Humble O. & R. Co. No. 1-B White, James McGahey Sur. T.D. 7,092 ft.; tstg.

Sun Oil Co. No. 15 White J. McGahey Sur. T.D. 7,100 ft., fishing.

Sun Oil Co. No. 17 White, James McGahey Sur. Drk.

Sun Oil Co. No. 19 White, James McGahey Sur. Drlg. sh. and l. 4,122 ft.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 69 Davis, B. Young League. Drlg. sd. 4,802 ft.

Blue Ridge—Fort Bend County

H. G. Frost et al No. 1 Robinson, H. Shropshire Sur. T.D. 3,666 ft.; P.B. to 2,900 ft.; no report.

Trans-State Oil Co. No. 4-B Blakely, E. Drew Sur. No report.

Orchard—Fort Bend County

Gulf Oil Corp. No. 46 Moore, Leo Burknapp Sur. Drlg. sh. 3,051 ft.

Gulf Oil Corp. No. 47 Moore, Leo Burknapp Sur. Rig.

Gulf Oil Corp. No. 5-A Moore, S.D. 1,-562 ft.; drlg. sh. 1,816 ft.

Thompson—Fort Bend County

Naylor et al No. 8 Gehr, S. Kennedy Sur. S.D. 4,431 ft.

Sterling O. & R. Co. No. 1 F. I. Booth, H. Chrisman Sur. T.D. 5,407 ft.; 7-in. csg. at 5,320 ft.; swbd.; would not flow; R.U. to pump.

High Island—Galveston County

Stanolind O. & G. Co. No. 56 Cade, N. Fitzsimmons Sur. T.D. 6,452 ft.; rng. csg.

Stanolind O. & G. Co. No. 57-A Cade, N. Fitzsimmons Sur. R.U.

Stanolind O. & G. Co. No. 1 Cooper, M. Dunman Sur. Drlg. stky. sh. 5,707 ft.

Stanolind Oil & Gas Co. No. 18-B Smith Royalty, M. Dunman Sur. T.D. 5,529 ft.; P.B. 3,650 ft.; sdtkd. at 4,022 ft.; drld. to 5,024 ft.; waiting on pmpg. unit.

Dickinson—Galveston County

Humble O. & R. Co. No. 3-A Stewart, J. Sellers Sur. T.D. 8,026 ft.; rng. tbg.

Humble O. & R. Co. No. 3-B Bayou Dev. Co., J. Sellers Sur. D.&A. at 8,370 ft.

Humble O. & R. Co. No. 4 E. E. Townes, J. S. Jones and B.B.B.&C. Ry. Sur. Drlg. sh. 1,980 ft.

Ken Ben Oil Co. No. 1 Stewart, W. E Wilson Sur. T.D. 8,689 ft.; 7-in. csg. at 8,621 ft.; I.P. 8 B.P.H.; 9/64-in. ck.; C.P. 1,375 lbs.; T.P. 850 lbs.

Stanolind O. & G. Co. No. 4 State, Tr T.D. 8,125 ft., top sand at 8,107 ft.; P.B. 8,000 ft.; 7-in. csg. at 7,980 ft.

Stanolind O. & G. Co. No. 5 State, Tract 3 Drlg. sh. 9,155 ft.

Arriola—Hardin County

Republic Prod. Co. No. 13 Arriola fee, Arriola League. Drlg. sd. 758 ft.

Batson—Hardin County

Gulf Oil Corp. No. 175 Wing, F. H. Green Sur. Rig.

Lacawanna Prod. Co. No. 1 Butler, W. Donoho Sur. S.D. 3,605 ft.

Saratoga—Hardin County

Rio Bravo Oil Co. No. C-151 Cotton Tract. Drlg. sdy. sh. 1,050 ft.

Eureka—Harris County

Houston Oil Co. No. 1 Helberg & Lackner, John Rinerman Sur. Drk. and plts.

Mykawa—Harris County

West Prod. Co. No. 9 Irwin, W. B. Walker Sur. T.D. 5,140 ft.; no report.

West Prod. Co. No. 1 Minnetex, Wm. Lovett Sur. No report.

Pierce Junction—Harris County

Rio Bravo Oil Co. No. 14-B Settegast, J. Kappman Sur. T.D. 3,784 ft., 7-in. on bottom; swbd. dry; trying to pull screen.

Gulf Oil Corp. No. 12 Cain, J. Hamilton Sur. Drlg. gbo. 2,277 ft.

Gulf Oil Corp. No. 4 Manchester. Drlg. stky. sh. 4,187 ft.

South Houston—Harris County

Schwab & C. & C. Drlg. Co. No. 1 Williams. No report.

Smith & McDannald No. 1 Merridith, H. T.&B. Sur. No. 6. 7-in. csg. at 4,775 ft.

Stanolind O. & G. Co. No. 1 Minnie Barrett, H.T.&B. Sur. No. 6. Drlg. hd. sdy. l. and sh. 2,324 ft.

Stanolind O. & G. Co. No. 1 M. Buta. H.T.&B. Sur. No. 6. T.D. 4,775 ft.; 7-in. at 4,666 ft.; comp.; no gauge.

Stanolind O. & G. Co. No. 2 District 17. Rlk. "A." Rig.

Stanolind O. & G. Co. No. 4 Howard, H. T.&B. Sur. No. 6. 10¾-in. csg. 1,440 ft.

Stanolind O. & G. Co. District 24, H.T.&B. Sur. No. 5. Drlg. plug.

Stanolind O. & G. Co. No. 3 First Natl. Bank, Callahan-Vince Sur. Sh. 4,833 ft.; 7-in. csg. at 4,777 ft.

Stanolind O. & G. Co. No. 1 Pittman, H. T.&B. Sur. No. 6. M.I.R.

Stanolind O. & G. Co. No. 2 Schwartz, H. T.&B. Sur. Drlg. strky. sh. 4,301 ft.

Stanolind O. & G. Co. No. 1 C. J. Wyndelts, H.T.&B. Sur. No. 6. T.D. 4,775 ft.; cmtd. csg.

Tomball—Harris County

Humble O. & R. Co. No. 1-B Juergens, J. House Sur. Sand 5,556-72 ft.; 7-in. csg. 5,568 ft.; I.P. 23.12 B.P.H.; T.P. 750 lbs.

Humble O. & R. Co. No. 4 Milo, C. N. Pillot Sur. Drlg. sh. 5,561 ft.

Humble O. & R. Co. No. 1 Townsite Unit 2, J. House Sur. Drlg. sh. 4,400 ft.

Humble O. & R. Co. No. 5 F. Treischel, J. House Sur. Drlg. hd. sd. 5,545 ft.

Amelia—Jefferson County

H. J. De Arman No. 1 First National Bank, F. Bergner Sur. 1-A. T.D. 7,021 ft.; abd.

Humble O. & R. Co. No. 2 Guinn, C. Williams Sur. T.D. 6,776 ft.; I.P. 14.73 B.P. H.; ⅝-in. ck.; T.P. 160 lbs.; C.P. 680 lbs.

Humble O. & R. Co. No. 2 M. E. Langham. Drlg. O.S. 6,778 ft.

Glenn H. McCarthy, Inc., No. 1 Langham. H. Williams Sur. T.D. 6,302 ft.; P.B. to 4,800 ft. to straighten hole.

Humble O. & R. Co. No. 2 S. Pinchback, C. Williams Sur. Drlg. 536 ft.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 3-A Pipkin and Davis, Wm. McFaddin Sur. T.D. 6,560 ft.; cutting and pulling stuck drill pipe at 6,300 ft.

Fannett—Jefferson County

Gulf Oil Corp. No. 10 Burrell, W. H. Smith Sur. Drlg. sd. 2,150 ft.

Cleveland—Liberty County

Gulf Oil Corp. No. 15-C Cleveland, J. Pleasant Sur. Drlg. sd. 5,907 ft.

Esperson—Liberty County

General Crude Oil Co. No. 26 Esperson, C. W. Fisher Sur. T.D. 3,097 ft.; perf. around 2,700 ft.

Hankamer—Liberty County

Uscen Oil Co. No. 5 Exzell, Levi Borrow Sur. No report.

Van Vleck—Matagorda County

Skelly Oil Co. No. 3-B Cobb, M. Cummins Sur. Drlg. hd. sd. 4,856 ft.

Skelly Oil Co. No. 1 Langham, M. Cummings Sur. T.D. 7,849 ft.; going into core.

Skelly Oil Co. No. 2 Metzler, M. Cummins Sur. Moving in.

Skelly Oil Co. No. 1 G. Moore, I.&G.N. Sur. T.D. 4,782 ft.; twisted off D.S.

Skelly Oil Co. No. 7-B Cobb, M. Cummings Sur. Drlg. sh. 6,937 ft.

Livingston—Polk County

Hawkeye Pet. Co. No. 1 W. F. Harder, A. Viesta Sur. D.&A. at 4,182 ft.

Humble O. & R. Co. No. 27 C. B. Granburg, A. Viesca Sur. T.D. 4,217 ft.; W. O.C.

Refugio—Refugio County

D. & D. Oil Co. No. 3, Heard townsite. T.D. 4,922 ft.; comp.; 130 bbls. daily.

Local Oil Co. No. 1 Rhea, Refugio Town Tr. Drlg. 3,928 ft.

W. F. Stone No. 1 C. P. Fox, Refugio townsite tr., Blk. 1, sec. 5. Spudded.

United Gas Co. No. 12 Fannie Heard, Refugio townsite. T.D. 4,922 ft.; I.P. 5 B. P.H.; 3/16-in. ck.; T.P. 1,725 lbs.; C.P. 1,875 lbs.

United Gas Co. No. 18 Fox, Hughes & Brown Sur. T.D. 5,880 ft.; I.P. 200 B.P. D.; ¼-in. ck.; T.P. 525 lbs.; C.P. 825 lbs.

United Gas Co. No. 19 Fox, Drlg. sdy. sh. 3,165 ft.

Tomoconnor—Refugio County

Quintana Pet. Co. No. 36-A Tom O'Connor, Swisher Sur. Cg. 5,300 ft.

Keeran—Victoria County

Gulf Oil Corp. No. 8 Keeran, DeLeon Sur. T.D. 6,444 ft.; P.B. to 6,165 ft.; perf. 5,894-99 ft.; made 275 B.P.D.; ¼-in. ck.; started S.W.; killed to P.B.

Placedo—Victoria County

Barnsdall-American Liberty No. 2 Pickering-Roos, J. M. Bronson Sur. T.D. 4,-767 ft.; 7-in. csg. at 4,752 ft.; W.O.C.

Parnsdall-American Liberty No. 4 Pickering-Roos, S.A.&M.G. Sur. T.D. 4,749 ft.; I.P. 120 bbls. in 15 hrs.; T.P. 1,500 lbs.; C.P. 1,600 lbs.

Barnsdall-American Liberty No. 3 W. R. Smith, A. Murphy Sur. R.U.

Barnsdall and Coastal Oil Co. No. 3 Wright, J. M. Bronson Sur. T.D. 875 ft.; 10¾-in. 865 ft.

Crown Central Pet. Co. No. 3 Gebraner, J. M. Bronson Sur. 7-in. csg. at 4,373 ft.

Eastern Texas Pet. Co. No. 2 Hosek, J. M. Bronson Sur. Drlg. sh. and l. 3,650 ft.

Harrison & Abercrombie No. 3 Sturdevant, S.A.&M.G. Sur. T.D. 4,764 ft.; I.P. 22 B P.H.; ¼-in. ck.; T.P. 610 lbs.

Haynes B. Ownby No. 1 Joe Malik, J. M. Bronson Sur. Drlg. sh. 1,900 ft.

Smith-Gulf No. 1-B Henderson and Pickering, S.A.&M.G. Sur. T.D. 4,785 ft.; 7-in. csg. 4,772 ft.; flwg. 40 B.P.D.; ¼-in. ck.; C.P. 375 lbs.

Superior O. & G. Co. No. 2-B Henderson & Pickering, J. M. Bronson Sur. Drlg. hd. l. 4,345 ft.

Clay Creek—Washington County

Sun Oil Co. No. 6 Caraway, J. F. Perry Sur. T.D. 1,174 ft., 10¾-in. at 103 ft.

Sun Oil Co. No. 7 Caraway, J. F. Perry Sur. Rig.

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. Drlg. 6,178 ft.

Louise—Wharton County

Pure Oil Co. No. 6 Chas. T. Kauntze, Morris-Cummins Sur. No. 19. Drlg. hd. sdy. l. 5,155 ft.

Pure Oil Co. No. 5 McIntyre, Morris-Cummins Sur. T.D. 5,155 ft.; set 5-ft. screen and lnr.; 2½-in. tbg.; C.O.

Pure Oil Co. No. 1 Sara G. Shult, L. P Ogden Sur. R.U.

Pickett Ridge—Wharton County

Adrian Moore No. 1 W. P. Wilbeck, J. Tele Forlner Sur. T.D. 4,719 ft.; perf. 4,-701-02 ft. with 12 holes; failed to flow; swbg. wash wtr.

Edwards Drlg. Co. No. 1 E. D. Farmer, I.&G.N. Sur. No. 39. 10¾-in. csg. at 1,-102 ft.; W.O.C.

Rio Bravo Oil Co. No. 1 T.&N.O. R.R. Co., I.&G.N. Sur. No. 39. Drlg. sh. and l. 2,-100 ft.

Texas Co. No. 22-A Pierce, I.&G.N. Sur. T.D. 4,708 ft.; 7-in. csg. at 4,701 ft.; W. O.C.

Texas Co. No. 23-A Pierce, I.&G.N. Sur. No. 38. 10-in. csg. at 1,309 ft.; drlg. sh. and l. 3,134 ft.

Texas Co. No. 24-A Pierce, I.&G.N. Sur. 10-in. csg. at 1,315 ft.; drlg. stky. sh. 2,151 ft.

Withers—Wharton County

Texas Co. No. 2-B Pierce, Pierce Est., Blk. B. Bldg. drk.

Texas Co. No. 7-C Pierce, J. Caldwell Sur. T.D. 5,565 ft.; 7-in. csg. on bottom; I.P. 9 B.P.H.; ¼-in. ck.; went dead; W.O.

Texas Co. No. 8-C Pierce, Wm. Pettus Sur. T.D. 1,055 ft. in sd. and bldrs.; prep. to run 10¾-in. csg.

Texas Co. No. 9-C Pierce, John Caldwell Sur. Drk.

GULF COAST WILDCATS

Austin County

W. H. Mitchell et al No. 1 F. Fenner, J. Fitzgibbons Sur. R.U.

Brazoria County

Deep South Pet. Co. No. 1 Adams Hrs. & Dummick, A. A. Talmage Sur. Drlg. sh. 1,500 ft.

Gulf Oil Corp. No. 1 Fairfield, A. Robinson Sur. T.D. 8,398 ft.; sdtkd. sh. 8,018 ft.; drlg. hd. sd. 8,197 ft.

Strake Oil Corp. et al No. 1 D. K. Poole. J. W. Hardin Sur. T.D. 6,738 ft., hd. sh., 9⅝-in. csg. at 6,736 ft.; drlg. plug.

Texas Co. No. 3 Freeport Sulphur Co., C. Areola Sur. Drlg. sh. 5,135 ft.

Texas Gulf and Bunte No. 1 Sparks, Wm. Roberts Sur. T.D. 7,525 ft.; set 5-in. csg. at 5,872 ft.; W.O.C.

Calhoun County

Continental Oil Co. No. 1 Austin Estate, sec. 12, Blk. H. T.D. 5,692 ft.; fsg.

Colorado County

Coyle-Concord & Sterling No. 1 Mary E. South, I.&G.N. Sur., sec. 41. Rig.

Galveston County

Shell Pet. Corp. No. 1 Mace Stewart, Spillman Sur. Drlg. stky. sh. 3,549 ft.

Hardin County

S. Hindman No. 1 Howth, A. J. Cotton Sur. Drlg. sh. 4,816 ft.

Republic-Houston Oil Co. No. 2 Burrell, A. A. Burrell Sur. No report.

Harris County

Bunte O. & G. Co. No. 1 Lobit et al, Benjamin Barrow Sur. Drk.

Zeni Oil Co. No. 1 W. A. Perkins, A. Sherrell Sur. No report.

Houston County

Ellison & McBride No. 1 Bean, E. Stedman Sur. S.D. chlk. 5,851 ft.

Jefferson County

Magnolia Pet. Co. No. 1 Funches, sec. 16, H.T.&B. Sur. Drlg. shale, show gas abd. 9,098 ft.

McSpadden et al No. 1 Burrell estate. Drlg. sh. 7,105 ft.

Shell Pet. Corp. No. 1 Carpenter, M. E. Piveto Sur. 11-min. D.S.T. from 6,005-22 ft.; ¼-in. ck. showed 20 stands of oil; cg. sd. and sh. 6,042 ft.

Sun Oil Co. No. 1 Herbert & Broussard, **B. Blackman Sur., Abst. No. 2. T.D. 8,-**707 ft.; cmtd. 2,003 ft. of 7-in. csg. at 8,693 ft.

Matagorda County

Marathon Oil Co. No. 1 Kountze, I.&G.N. Sur. No. 11. Rig.

Pierce Estate Inc. No. 1 Fee, Wm. Brown Sur. Drlg. sd. 1,100 ft.

Sun Oil Co. No. 1 Craig, Thomas Williams, **Sur. T.D. 6,336 ft.; P.B. 5,850 ft.; perf. csg. 5,340-95 ft.; swbd. dry; perf. csg.** from 5,240-95 ft.; P.B. to 5,180 ft., to perf. from 5,150-75 ft.; W.O.C.

Texas Gulf Prod. Co. (H. M. Smith) No. 2 Wadsworth, S. R. Fisher Sur. Sh. 1,320 ft.; moving in heavy rig.

Montgomery County

W. O. Bilonski et al No. 1 J. W. Wood, Wm. Weir Sur. Cg. sh. 3,688 ft.

Walter Blumenthal No. 1 Delta Land & Timber Co., J. Beuhn Sur. No report.

Orange County

Tide Water Oil Co. No. 1 E. N. Brown, Mary Latham Sur. Drlg. sh. 4,506 ft.

Polk County

Turnbull & Irwin No. 1 Mrs. Roberts, J. F. de Rumayor Sur. Drlg. sh. 4,886 ft.

Refugio County

Mills Bennett Prod. Co. No. 1 Walzell, E. Lopez Sur., Bonnie View Addn. Drlg. sh. 965 ft.

San Jacinto County

J. A. Deering No. 1 Randolph, V. Flores Sur. R.U.; drlg. wtr. well.

Tyler County

McArthur & Mixon No. 1 D. D. Kounts, J. A. Henkins Sur. T.D. 65 ft.

Walker County

Boone Bros. No. 1 Thompson Bros., J. Ortego Sur. No report.

L. M. Gay et al No. 1 M. E. Stubblefield, G. Bodilla Sur. R.U.

Wharton County

Cockburn Oil Co. No. 1 Fee, J. Smith & H. McKinzie Sur. Bldg. road.

Pure Oil Co. No. 1 A. P. Borden et al, W. H. Leckie Sur. No. 35. Bldg. drk.

Pure Oil Co. No. 1 Sam Shultz, L. P. Odgen Sur. No. 108. 16-in. csg. at 121 ft.

Smith & McDannald No. 1-A Priesmeyer, Charles Riley Sur. T.D. 5,582 ft.; sh.

Sterling O. & R. Co. No. 1 Genser-Jonathan Scott Sur. D.&A. 7,871 ft.

S. W. TEXAS WILDCATS

Aransas County

Buckingham Oil Co. No. 1 McCampbell, sec. 41-42, James Arids Sur. T.D. 7,501 ft.; recovered 6,200-ft. pipe; W.O. orders.

Atascosa County

Atascosa Trust No. 1 Domsch, 160 ft. S line, 300 ft. E line, 152-ac. lease, J. T. Russell Sur. 1,222. R.U. to drill deeper.

Heinetia Oil Co. No. 1 S. Pratt, 1,400 ft. NW line, 3,470 ft. SW line, J. de la Garza Sur. 46, drlg. below sur. csg.

Bee County

Eden Oil Co. No. 1-C Copeland, 1,723 ft. N line, 330 ft. W line, 80-a. tr., O. Marshall Sur. M.I.M.

L. Glasscock No. 1 Holzmark, James York Sur. T.D. 4,400 ft. D.&A.

Howeth & Singer No. 1 Voss, 990 ft. NW line, 330 ft. SW line, S. May Sur. Sd. 4,-017-21 ft.; S.O.; tstg.

Nichols & Quinn No. 1 Scott, Blk. 7, J. Molina Sur., Uranga grant. Derrick.

Severy Oil Co. No. 1 Copeland, 330 ft. N line, 2,100 ft. E line, O. Marshall Sur. Perf. 3,470-74 ft., salt water, recemented. W.O.C.

Bexar County

Fred Thorman No. 1 Sahm, Peter B. Hayes Sur. Drlg. 1,412 ft.

Woodward & Hardy No. 1 DeVilbiss, J W. DeVilbiss Sur. Cg. 2,277 ft.

Brooks County

California Co. No. 1 B. Garcia, 465 ft. N and W lines lse., B. Garcia tr., Salinas Sur. T.D. 8,022 ft. Fsg.

Caldwell County

W. D. Jennings No. 1 McMahon, 63-ac. tr., Pinchback Sur. T.D. 2,324 ft. D.&A.

Cameron County

W. W. Ely No. 1 Port Isabel Irrigation Co., Blk. 17, Shares 29, 30 and 31, P. I. I. Co. Subd. Loc.

Duval County

Conservative Oil Co. No. 1, D.C.R.C. Sur. 51. D.S.T. 550 ft. oil, 200 ft. s.w. in 15 min. at 1,533-53 ft. Sd. 1,533-41 ft. To set csg. 1,553 ft. and perforate.

Gifford Oil Co. No. 1 Roach, Sur. 300. Drlg. 1,021 ft.

C. G. Glasscock No. 2 Milano S.&G. Co., 330 ft. N line, 2,310 ft. E line, Sur. 88. Cored sd. 3,275-91 ft. Show oil. D.S.T. failed. Rng. csg.

Frank Gravis No. 1 C. K. Gravis, 1,650 ft. SE line, 990 ft. SW line, Sur. 250. Set csg. 5,080 ft. Drlg. plugs.

Hamil & Smith No. 1 Benavides, Subd. 1, J. B. Sands, Mesquite Sur. Drlg. 1,720 ft.

J. J. O'Hern No. 1 Carrillo, Sur. 442 Drlg 2,572 ft.

Randon Oil Co. No. 1 Central Securities. Drlg. 811 ft.

Rogers & Rogers No. 1 Pena, 3,337 ft. SW line, 1,306 ft. NW line, R. S. de Pena plat. D.S.T. 2,778-90 ft., 40 lbs. W.P., 70 ft. mud 13 min. Cg. 2,832 ft.

Goliad County

Zeni Oil Co. No. 3 Lutenbacher, 330 ft. N and W lines, SE¼, sec. 25. Drlg. sh.; no shows, 4,015 ft.

Hidalgo County

Gulf States Oil Co. No. 3 John Engleman, Lot 3, Blk. 70. T.D. 6,812 ft.; sh.; P.B. 6,695½ ft.; perf. & rocked, no show. S.D. for orders.

Helen K. Maxwell No. 1 Hidalgo Wtr. Dist. No. 2, Lot 11, Blk. 26, Alamo Land & Sugar Co. Subd., Alamo Tr. T.D. 731 ft. S.D.

Quintana Petroleum Co. No. 1 John C. Engleman, Lot 10, Blk. 94, Las Mestanas grant. T.D. 8,904 ft., washing down over stuck drill pipe.

Dayle Smith No. 1 Fairbanks & Young, Blk. 44, Porc. 46. Correction: Drlg. sh. 1,872 ft.

Jim Hogg County

J. J. Cosner No. 1 Vela hrs., Sh. 1, Blk. 5, Clark & Cowden Subd., El Peyote gr. Loc.

Magnolia Pet. Co. No. 1 Magnolia-Holbien, Sur. 35, Arriba grant. Drlg. sh. and sd. 2,667 ft.

Theo. Hicks et al No. 1 Kohler, C W½ sec. 9, Novacitas grant. Loc.

Jim Wells County

Edwin M. Jones No. 1 Robt. Adams, 446 ft. S and W lines, Blk. 47, Waldron Oil & Gas Subd., Adams ranch. Sd. 4,703-26 ft., odor oil. D.S.T. showed mud cut with oil. Cg. sh. 4,727 ft.

R. A. Graddy No. 1 Bennett, 330 ft. N and W lines, Lot 87, sec. 76. Spudded. S.D.

Gist & Graddy No. 1 Owens, 660 ft. N line, midway E and W lines, Sur. 151. S.D. 1,927 ft.

Karnes County

R. L. Barnett No. 1 fee, NE cor. 568-ac. tract. Drlg. 1,423 ft.

DeGraffe & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell League Spudded in.

Worth Oil Co. No. 1 Hysaw, 1,070-acre tract, Sequin grant. M.I. rotary.

LaSalle County

Kennedy & Johnston No. 1 Gilman & Wildenthal, 330 ft. NW and NE lines, 140-a. tr., Sur. 283. Derrick.

Hartmangruder Drlg. Co. (Paul Meador) No. 1 Reed, sec. 136. Resumed drlg. 2,-790 ft.

W. H. Vernon No. 1 Las Abias ranch, 150 ft. N line, midway E and W lines, sec. 726. Loc.

Live Oak County

Dirks Bros. No. 1 Nichols, 790 ft. S line, 365 ft. W line, S. Ryan Sur. A-35. Fsg. 881 ft.

O. Dovre No. 1 San Antonio Joint Stock Land Bank, 150 ft. N line, 725 ft. E line, Plat 27, Tips Subd., Everett Sur. Spudded.

J. J. McRoberts No. 1 Mahoney, 3,100 ft. SW Junction Three Rivers, Tilden Highway and Thomas Henry Sur. lines, 150 ft. N. Drlg. 527 ft.

Windsor Oil Co. No. 1 B. E. Stolte, con. tr., Wm. Kundy, 3,690-ac. blk. Drlg. 2,436 ft.

McMullen County

C. I. Jennings No. 1 Regan, 1,070 ft. S. Frio River, 330 ft. W line, 642-a. tr., Haley Grant. Set sur. csg. W.O.C.

Rainer Oil Co. No. 1 Hagist, 330 ft. S and W lines, SW¼, SE¼, Sur. 25. Drlg. 2,021 ft.

C. C. Shumway No. 9 Shiner, 330 ft. N & W lines, NE¼ sec. 51. M.I.M.

Nueces County

V. L. Blanchard No. 1 T. H. Isensee, 336 ft. N and E lines, Blk. 8, R. Schaffer Lands Subd. Drlg. 5,573 ft.

W. D. Hines No. 1 Fiato, NW cor. Driscoll Townsite. S.D. 4,072 ft. (corrected).

M. F. Huriburt No. 1 Phillips, sec. 8, Flour Bluff Garden Tracts. Cg. 7,320 ft.

O. W. Killam No. 1 Ellick, 330 ft. and E lines tr., sec. 109, Paul Subd. Sd. 3,892-98 ft.; capped and killed with cement. Erecting derrick to tap shallow gas sand.

Terminal Oil Prod. Co. No. 1 Thurman, 660 ft. N and W lines, SW¼, sec. 10. Drlg. 5,423 ft.

G. M. Richardson No. 1 Gerhardt, 660 ft E line, 330 ft. N line, sec. 79. T.D. 6,020 ft. D.&A.

Milam County

J. C. Kilgore No. 1 Newton, J. Reed Sur. Drlg. 1,829 ft.

San Patricio County

Benedum & Trees Oil Co. No. 2 Welder sec. 19. T.D. 7,015 ft. P.B. 5,710 ft. to test.

Benedum & Trees Oil Co. No. 3 Welder, 2,259 ft. E line, 940 ft. S line, sec. 19, Welder Ranch Subd. Drlg. hd. l. 5,872 ft.

C. B. Bunte No. 1 Mayfield, 131 ft. W line, 237 ft. N line, Tr. 11, Ross Subd. R. U. and S.D.

O. W. Killiams No. 1 Green, 150 ft. E and NW lines tract, Geo. H. Paul Subd. M.I.M.

Joe Lundins No. 1 Welder, 330 ft. N and W lines, sec. 30, Paul Subd. Drlg. 3,724 ft.

Plymouth Oil Co. No. 2-D Welder, 466 ft. N and E lines, sec. 4. Spudded.

Portilla Oil & Gas Co. No. 1 Welder, 466 ft. E line, 2,333 ft. N line, sec. 5. T.D. 6,100 ft. Tested s.w.

Taft Prod. Co. No. 1 Thomas, 150 ft. N & E lines, sec. 6, 2nd Addn. Taft Farm Lands. M.I.M.

Starr County

J. F. Anderson No. 1 Ysagierre, Tr. 1 Porc. 79, J. of Camargo. Cg. 1,733 ft.

Porter Evans No. 1 Starr County Cattle Co., Lot 14, Evans Subd., Sh. 60, Porc. 89, J. of Camargo. M.I.M.

Bishop & Henshaw No. 1 Martin, 660 ft. S line, 927 ft. W line, Sur. 627. Drlg. 1,187 ft.

Coreta Oil Co. No. 1 Pena, 150 ft. S and E lines, Sh. 80, Porc. 81. T.D. 1,500 ft.; S.D.

Killam & Stagg, No. 2 Sanford Ricaby, Porc. 83, Jurisdiction of Camargo. Cleaning hole 1,420 ft.

Larkin & Warr No. 1 Kelsey-Bass, 533 ft. N line, 408 ft. E line, Lot 8, Porc 87. Cg. sh. and sd. 4,942 ft.

Ed Leach No. 2 Wood Est., Por. 84, J. of Camargo (old Weyel No. 1 Wood) W.O. T.D. 2,160 ft.; reworking.

Porter Evans et al No. 1 Starr County Cattle Co., cen. Lot 14, Sh. 60, Porc. 89 J. of Camargo. M.I.M.

Webb County

French Oil Co. No. 1, S. Benavides Sur. No. 2,254 ft. Drlg. 2,112 ft.

Ohio Fuel Oil Co. No. 1 D.C.R.C., 330 ft. S and W lines, Lot 16, Zapata School Lands, Sur. 4, set csg. 48 ft. W.O.C.

Willacy County

M. E. Morton et al No. 1 Santa Rosa, 330 ft. N and E lines, Lot 12, Blk. 31 Santa Rosa Subd., Sh. 44. Loc.

Shell Pet. Corp. No. 1 Yturria Land & Cattle Co., 990 ft. S and E lines, Shar-64, San Juan de Carricitos grant. T.D. 5,486 ft. Drlg. 5,820 ft.

Wilson County

A. G. Reimenschneider No. 2 L. Harrell 750 ft. NE line, 2,800 ft. NW line Barrera Sur. Fsg. 740 ft.

Zapata County

Ivan Howard No. 1 Martinez, 330 ft. NE and NW lines, Sur. 241. Cg. 2,166 ft.

O. J. Perron No. 1 Uribe, 330 ft. NE line, 227 ft. SE line, Blk. 31, Borrego grant. Spudded.

Zavalla County

Bay Oil Co. No. 1 Nat. Bank of Commerce, sec. 43, A.B.&M. Sur. Drlg. 6,355 ft.

Frank Buttram No. 1 Whitecotton, 2,400 ft. N line, 300 ft. W line, A.B.&M. Sur S.D. 5,475 ft.

S. W. TEXAS PROVEN

Dirks—Bee County

Dirks Bros. No. 7 Harris, 65-acre tract, J. S. Dugat Sur. M.I.M.

Ray—Bee County

N. V. Duncan No. 3-A Campbell, B.&B Sur., Abst. 139. R.U.

Sunburst Oil Co. No. 1 Ray, W. B. Blanchard Sur. Testing 3,929 ft.

Alta Verde—Brooks County

Fairway Prod. Co. No. 1 Singer, Sur. 312. T.D. 921 ft. Cap rock. Stdg.

Starr Dev. Co. No. 1 Singer, Sur. 436. T.D. 1,640 ft. P.B. 830 ft. Perf. 811-18 ft. Bailing.

Dick Young No. 5 Singer, Blk. 12, Sur. 312. Set csg. 40 ft. T.D. 100 ft. W.O. orders.

Salt Flat—Caldwell County

Louis Crouch No. 1 Davis, A. Floyd Sur. R.U. to pmp. at 235 ft.

Driscoll—Duval County

Continental Oil Co. No. 9-A Sevier, Sur. 23. Testing 3,329-35 ft.

Government Wells—Duval County

Magnolia Pet. Co. No. 7 Bryan White, sec. 49. Drlg. 1,060 ft.

Morris Stein No. 1 Hahl, 160-ac. tract, Sur. 47. Spudded. S.D.

J. T. Stover No. 1 Hester, 330 ft. S and E lines, SW¼, NE¼, Sur. 47. Corrected depth 1,300 ft. S.D.

Hoffman—Duval County

Duval Oil Corp. No. 2 Hoffman, Sur. 118. Comp., no gauge. T.D. 2,902 ft.

Duval Oil Corp. No. 4 Hoffman, sec. 118. Set csg. 2,953 ft. W.O.C.

W. C. McBride No. 1 Cuellar, Sur. 123. R.U.; drlg. 2,607 ft.

W. D. Maston No. 1 Ruiz, Sur. 128. Perf. 2,604-10 ft. No show.

Plymouth Oil Co. No. 2-B Hoffman, Sur. 118. Sd. 2,903-13 ft. Set csg. 2,913 ft. W.O.C.

Rogers & Rogers No. 3 Hoffman, Sur. 118. M.I.M.

Rogers & Rogers No. 3 Sutherland, 500 ft. W of No. 1, 330 ft. S line, sec. 130. Set csg. 2,883 ft. T.D. 2,885 ft. Comp., no gauge.

Rogers & Rogers No. 4 Sutherland, E½. Sur. 120. M.I.M.

Standard of Kansas No. 5 Hoffman, Sur. 118. Set sur. csg. 21 ft. W.O.C.

N. Kohler—Duval County

Mills Bennett Prod. Co. No. 2 Peters, Sur. 178. D.S.T. 2,619-33 ft. 1,100 ft. oil. Comp., flowing 15 B.P.D. fluid into pits.

Mills Bennett Prod. Co. No. 3 Peters, 980 ft. N line, 330 ft. W line ,Sur. 178. Skidding on.

Navarro Oil Co. No. 1 Peters, Sur. 39. Sd. 1,780-90 ft.; sd. tstd. gas; T.D. 2,364 ft. S.D. for water.

Windsor Oil Co. No. 2 Peters, 2,304 ft. S line, 3,269 ft. E line, Sur. 33. No report.

Labbe—Duval County

Stanolind O. & G. Co. No. 5 Farmers Life Ins., Sur. 416, 660 ft. S and E No. 1. M. I. M.

Loma Novia—Duval County

Bridwell Oil Co. No. 9-A Hubbard, Sur. 71. Drlg. 890 ft.

Bridwell Oil Co. No. 10-A Hubbard, Sur. 71. Comp. 240 B.P.D. Sd. 2,770-84 ft.

Bridwell Oil Co. No. 1-D Hubbard, sec. 73. Drlg. 2,413 ft.

Bridwell Oil Co. No. 11-C Hubbard, Sur. 75. M.I.M.

Bridwell Oil Co. No. 12-C Hubbard, Sur. 75. Comp. 242 B.P.D., ½-in. choke. T.D. 2,610 ft.

Claude Hamil Co. No. 18 Hubbard, Sur. 77. Sd. 2,672-92 ft. Set csg. W.O.C.

Highland Oil Co. No 32 Hubbard, Sur. 72. Sd. 2,752-75 ft. Comp. 11 B.P.H.

Humble Oil & Refining Co. No. 38-B Hubbard, Sur. 83. Oil sd. 2,698-2,710 ft. Comp., 25 B.P.H.

Humble O. & R. Co. No. 42-B Hubbard, Sur. 72. Drlg. hd. sd. 53 ft.

Humble Oil & Refining Co. No. 43-B Hubbard, Sur. 83. Drlg. 2,737 ft.

Humble Oil & Refining Co. No. 58-B Hubbard, Sur. 83. M.I. Rig.

Humble O. & R. Co. No. 59-B Hubbard, Sur. 72. Set csg. 2,762 ft W.O.C.

Humble O. & R. Co. No. 13 Ruiz, Sur. 553. Drlg. sh. 1,005 ft.

Humble O. & R. Co. No. 9 Vela, Sur. 42. Sd. 2,685-2,705 ft. Comp. 15 B.P.H. T.D. 2,707 ft.

Magnolia Petroleum Co No. 31 Hahl, Sur. 67. Drlg. 2,040 ft.

Magnolia Petroleum Co. No. 40 Hahl, Sur. 67. M.I.M.

Rodney DeLange No. 4 Moody, Sur. 76. Comp. est. 165 B.P.D. T.D. 2,756 ft.

Shell Pet. Corp. No. 3 Bishop, Sur. 59. Comp., no gauge. T.D. 2,550 ft.

Shell Petroleum Corp. No. 4 Bishop, Sur. 59. Sd. 2,535-49 ft. Set csg. 2,536 ft. W.O.C.

Shell Pet. Corp. No. 27 Hubbard, Sur. 77. Sd. 2,713-28 ft. Set csg. 2,728 ft. W.O.C.

Shell Pet. Corp. No. 30 Hubbard, Sur. 84. Comp., swbg. 17.4 B.P.H. T.D. 2,723 ft.

Texas Co. No. 15 B.C.C., Sur. 59. T.D. 2,537 ft. Swbg. 80 ft. oil in hole.

Texas Co. No. 41 Wendt, Sur. 68. Comp., 810 B.P.D. on ½-in. ck.; T.D. 2,659 ft.

Texas Co. No. 46 Wendt, Sur. 68, set csg. 93 ft. Stdg. W.O. water.

Loma Vista—Duval County

Atlantic Oil Prod. Co. No. 1 J. F. Welder hrs., 330 ft. N and E lines, 160-ac. tr., Sur. 103. Loc.

Ouachita Parish

Interstate Natl. Gas Co. No. 49 fee, 2,987 ft. W, 210 ft. N of NE cor. sec. 45-19-3e. Loc.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 5 D.C.R.C., Sur. 95. Drlg. 890 ft.

Palangana—Duval County

Frank Granis No. 3-A Scharlett, Sur. 255. M.I. rig.

Piedras Pintas—Duval County

Cabildo Oil Properties, Inc., No. 2 Tinney, sec. 8. T.D. 3,450 ft. D.&A.

Seven Sisters—Duval County

Atlantic Oil Prod. Co. No. 3-E Welder, Sur. 102. Location.

Atlantic Oil Prod. Co. & Darby Pet. Corp. No. 2-G Welder, Sur. 102. T.D. 2,427 ft. Tested gas, R.P. 850 lbs.

S. B. Cloyes No. 1 Serna, 330 ft. N and E lines tr., Sur. 384. Loc.

Darby Petroleum Corp. No. 1 Welder, 120-ac. tr., Sur. 102. Sd. 2-418-37 ft. Set csg. W.O.C.

Dulce Henderson & Harvey No. 1 Hagist, Sur. 271. Sd. 2,415-25 ft., tested mud. Cg. deeper.

Humble O. & R. Co. No. 4 Badgley, Sur. 307. Sd. 2,516-28 ft. R.U. to pump.

Humble O & R. Co. No. 12-B Serna, Sur. 384. P.B. from 2,722 ft. to 2,209 ft. W.O.C.

Humble O. & R. Co. No. 11 Smith, Sur. 382. T.D. 2,439 ft. Comp., 16½ B.P.H.

Humble O. & R. Co. No. 14 Smith, Sur. 382. M.I.M.

Humble O. & R. Co. No. 15 Smith, Sur. 382. Drlg. 57 ft.

Illinois Pet. Co. (Fred Shield) No. 1 Hazelwood, Sur. 110. T.D. 2,498 ft.; comp. 20 B.P.D.

Illinois Petroleum Co. No. 2 Hazelwood, Sur. 110. Drlg. 2,536 ft.

Chas. Kleiner No. 1 Chernosky, Sur. 226. M.I.M.

Mid-Continent Pet. Corp. No. 8 Serna, Sur. 384. Sd. 2,199½-2,208 ft.; swbg. in.

Navarro Oil Co. No. 6 Welder, Sur. 383. Comp. 20 B.P.H. on ⅝-in. choke. Sd. 2,469-77 ft.

Navarro Oil Co. No. 6 Welder, Sur. 383. M.I.M.

Pan American Prod. Co. No. 4-A Welder, Sur. 381. T.D. 2,452 ft. D.&A.

Pan American Prod. Co. No. 3-C Welder, Sur. 383. Sd. 2,461½-68 ft. D.S.T. 1,000 ft. oil in 15 min. Set csg. W.O.C.

Parr Oil Co. No. 4 Welder, Sur. 383. Sd. 2,443-53 ft. S.D.

Reliance Oil & Royalty and H. H. Henderson No. 4 Drummond, Sur. 308. No report.

Santa Clara Oil Co. No. 8-B Welder, Sur. 383. No report.

Texas Co. No. 2 Badgley, Sur. 307. M.I.M.

Westheimer & Daube No. 13 Campos, Sur. 224. Comp. 384 B.P.D.; sd. 2,184-2,222 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 7 Halff & Oppenheimer, 1,320 ft. W line, 330 ft. S line, J. H. Gibson Sur. No. 16. T.D. 3,926 ft.; P.B. 3,910 ft.; W.O. tools.

Amerada Pet. Corp. No. 2 Michael, 511 ft. N line, 466 ft. W line, A. Lynch Sur. 321. M.I.M.

Amerada Pet. Corp. No. 1 Miller, 466 ft. NE and SE lines tr., B. Saltillo Sur. Rebuilding derrick.

Amerada Pet. Corp. No. 3 Smith, 466 ft. E line, 905 ft. N line, J. B. Mason Sur. 322. M.I.M.

Combs & Oakes No. 1 Arp, 330 ft. S and E lines, 102-ac. tr., S. Blair Sur. 397. Top chalk 5,507 ft. Saturation cored 5,-535-55 ft. To set csg.

North Pettus—Goliad County

Bostex Oil Co. No. 1 Lackey, 1,650 ft. NW line, J. Gomez Sur., 1,660 ft. SW of No. 3-A. Loc.

Jane Oil Co. No. 3-B Gillette, 810 ft. SE No. 2-B, cen. N and S lines, J. Gomez Sur. Set csg. 3,668 ft. Sd. 3,668-71 ft.

Jane Oil Co. No. 1 Runge State Bank, 990 ft. SE line, 150 ft. SW line, J. B. Myers Sur. Sd. 3,711-17 ft. Set csg. 3,711 ft. W.O.C.

Jane Oil Co. No. 2 Runge State Bank, tr. 6, J. B. Myers Sur. Sd. 3,112-17 ft. Rng. csg.

Magnolia Pet. Co. No. 1 Gillette, 137 ft. SW line lse., 1,650 ft. NW line, J. Gomez Sur. Set csg. 3,860 ft. Swbg. in.

Magnolia Pet. Co. No. 2 Weldon & Sachey, 990 ft. NW line, 5,250 ft. SW line, J. Gomez Sur. Comp. 308.4 B.P.D. Sd. 3,-670-89 ft.

Sun Oil Co. No. 6 Scarborough, E. Talley Sur. Sd. 3,632-40 ft. Swbg. in.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande L. & I. Co., 4,000 ft. SE of No. 1 Farm Tr. 3,309, Blk. 59. T.D. 7,597 ft.; washing well, no show.

Union Sulphur Co. No. 8 American Rio Grande L. & I. Co., 660 ft. N & E lines Tr. 2,120, Blk. 87. T.D. 7,822 ft.; P.B. and perf. 7,449-60 ft. Ran tbg. Blowing in.

Union Sulphur Co. No. 9 American Rio Grande L. & I. Co., Farm Tr. 3,375 Blk. 59. T.D. 7,658 ft. P.B. 7,319 ft. to sidetrack.

Samfordyce—Hidalgo County

J. T. Barlow No. 1 Marta Flores de Chapa, Tr. 250, Porc. 39 (workover) Cg. 3,150 ft.

Barnett Pet. Corp. No. 3-A Sheldon, Tr. 11, Porc. 41. Cg. 2,937 ft.

C. A. Clements No. 2 F. B. Guerra, Tr. 254, Porc. 39, Sd. 2-791-96 ft. Comp. 80 B.P.D. on 3/16 in. choke.

Weekly Oil Corp. No. 2 Lula George, Tr. 12, Porc. 41. Cored s.w. sd. 2,780-84 ft. Stdg.

G. W. Wheeler No. 1 F. Farias, Tr. 255, Porc. 39. M.I.M.

G. W. Wheeler No. 2 Felipe Farias, Tr. 255, Porc. 39. Cg. 3,051 ft.

Bentonville—Jim Wells County

La Jita Corp. No. 1 Erck, 330 ft. N & E lines, N½, sec. 75. M.I.M.

La Jita Corp. No. 1 Pope, 660 ft. S and E line, sec. 20, King Farm Lots. S.t. 4,518-24 ft., dry gas. Cg. sh. 4,687 ft.

Stanolind O. & G. Co. No. 1 Frame & Bowers, 330 ft. S & E lines, sec. 14. M.I.M.

Stanolind O. & G. Co. No. 1 Raney, 330 ft. N and E lines, sec. 16. Sd. 5,364½-76 ft. D.S.T. 750 ft. oil, 85 lbs. W.P., 10 min. Set csg. Drlg. plugs.

Stanolind O. & G. Co. No. 1 Sain, 330 ft. S and W lines, sec. 18. Drlg. hd. sd. 5,503 ft.

Stanolind O. & G. Co. No. 1 Thompson, 330 ft. N and W lines, NE¼ sec. 4. Drlg. 4,287 ft.

Texon and Lucey No. 1 Dodd, 330 ft. S and E lines, sec. 15, R. King Farm Lots Subd. No report.

Lucas—Live Oak County

Houston Oil Co. No. 35 Cartwright, 800 ft. NE R.R., 2,440 ft. NW No. 33. Drlg. sh. 264 ft.

Calliham—McMullen County

Lightfoot Oil Co. No. 1 Lark, Blk. 118, Scrugham Sur. Recementing 1,058 ft.

Swearengen's No. 1 Calliham, Blk. 17, Hely Sur. Sd. 972-74 ft. D.&A.

Rhode—McMullen County

Whisenant & Trenchard No. 1 Roos Bros., sec. 60. T.D. 3,074 ft. D.&A.

Agua Dulce—Nueces County

Parker, Foran & Knode No. 1 J. G. Ingram, sec. 9, Ross Peters Subd. No. 2 Set 10¾-in. csg. 490 ft. W.O.C.

Texon Royalty Co. No. 1 Elliff, 466 ft. E line, 2,194 ft. S line tr., Longorio grant. R.U.

Saxet Heights—Nueces County

Capitol Oil Co. No. 1 Corpus Christi Ind. School Dist., Fairview School Survey. Drlg. 3,023 ft.

W. W. Chapman No. 1 Mrs. J. A. Walsh, 180 ft. SW line, 83 ft. NW line tr., Country Club. Addn. Drlg. 4,057 ft.

Cherokee Oil Co. No. 1 Morris, Bancroft Farm Lots. No report.

Cherokee Oil Co. No. 1 Turbeville, 100 ft. N line, 115 ft. W line, 2-ac. tr., Rincon del Oso Sur. Comp. 5 B.P.H. Sd. 4,050-65 ft.

Corpus Christi Ref. Co. No. 2 Fee, 11.19-ac. tr., Sigler Sur. Comp. 149 B.P.D. Sd. 4,063-70 ft.

J. K. Culton No. 2 Cantwell, Villareal Sur. Sd. 4,070-82 ft. Comp. 390 B.P.D. on ¼-in. choke.

A. C. Erwin No. 3 fee, Cen. Blk. 1, Oak Park Addn. R.U.

Tom Graham No. 1 Haug, Lots 6 and 7, Ellendale Gardens No. 2. Drlg. plugs; T.D. 4,086 ft. Comp. gasser. Recementing.

Tom Graham No. 1-B Priour, 4½-ac. tr. Sd. 4,068-73 ft. Comp. 20 B.P.H. on ¼-in. choke.

D. H. Hawn No. 1 G. R. Swantner, cen. 1.74-ac. tr. Comp. 88 B.P.D. on ⅛-in. choke. Sd. 4,084-88 ft.

Houston Oil Co. No. 1 McBride, 94.98-ac. tr., Villareal Sur. Set csg. 613 ft. W.O.C.

Maryland Oil Co. No. 1 Villa Gardens, Blk. 12, Villa Gardens Subd. Drlg. 441 ft

Pedernal Oil Co. No. 1 C. R. Priour, cen. Blk. 15, Oak Park Addn. Loc.

Pedernal Oil Co. No. 2 Priour, Blk. 16, Oak Park Addn. D.S.T. 4,060-75 ft., 1,125 ft. oil in 9 min. Set csg. W.O.C.

Port Oil & Gas Co. No. 4 Country Club, Lot 20, Villareal Sur. Sd. 4,074-86 ft., Completing.

Renwar Oil Corp. No. 1 Guaranty Title & Trust Co., Lot 9, Blk. 12, Villa Gardens. Set csg. 4,087 ft. W.O.C.

W. A. Richardson No. 2 Edwards, 10-ac. tr., Villareal Sur. Drk.

Richardson Petroleum Co. No. 1 Priour, Lot 1, Oak Park Addn., R.U.

Reed & Spiller No. 1 Harmon & Flood, 180 ft. N line, 2-ac. tr., Ellendale Gardens No. 1. Drlg. 4,030 ft.

Simon et al No. 1 Bagnall, Harbor View Addn., testing 4,065 ft.

W. F. Stone No. 1 J. H. Dryer, Blk. 8, Villa Gardens. Sd. 4,077-83 ft. Comp. 1,152 B.P.D. on ⅝-in. choke.

Taylor Ref. Co. No. 2 Corpus Christi Country Club, 250 ft. SW line, 1,005 ft. SE line, 73-ac. tr. Sd. 4,066-70 ft.; completing.

Taylor Ref. Co. No. 3 Corpus Christi Golf & Country Club 73-ac. tr. Skidding on.

Taylor Ref. Co. No. 2 fee, Villareal Sur. Set csg. 4,071 ft. W.O.C.

Westgate Oil Co. No. 4 Sturm Estate, 83-ac. tr. No report.

Westgate Oil Co. No. 5 Sturm Estate, 83-ac. tr. Drlg. 3,716 ft.

Winn Drlg. Co. No. 1 Starr, 125 ft. NW line, 150 ft. SW line, 3.39-ac. tr., Blk. 11, Bancroft Farm Lots. Top sd. 4,068 ft.; set csg. 4,077 ft.; Stdg.

Saxet—Nueces County

Paul Benedum No. 2 Morgan, Sur. 405 (old Gibson O. & G. Co. test) Drlg. 5,727 ft.

W. W. Chapman No. 2 Morgan, 660 ft. W No. 1 Morgan, 322-ac. tr., Sur. 405. Set csg. 1,200 ft. W.O.C.

W. W. Chapman No. 1 M. B. Humphrey, 330 ft. N & W lines, 20-ac. tr., J. W. Stevens Sur. 406. Drlg. 2,517 ft.

W. W. Chapman No. 1 Morgan Clark, 330 ft. S and E lines, 322-ac. tr., Sur. 405. (Old Texas Coast Oil Co. well) T.D. 5,-851 ft. Comp. 174 B.P.D. on 7/64 inch choke.

Coastland Oil Co. No. 1 Page Bros. (workover). T.D. 5,931 ft.; P.B. to sdtrk. and test 5,700 ft. and 5,800 ft. sands.

Conroe Drlg. Co. No. 2 Frank Bliss, J. W. Stevens Sur. 406. Drlg. 4,927 ft.

Conroe Drlg. Co. No. 1-A Rand Morgan, 990 ft. E line, 330 ft. N line, Sur. 403. Drlg. 3,596 ft.

Conroe Drlg. Co. No. 1-B Rand Morgan, 330 ft. N line, 990 ft. E line lease, Sur 403. Sd 5,836-42 ft. Tested s.w. Cg. 6,052 ft.

Conroe Drilling Co. No. 1-C Rand Morgan, 990 ft. E line, 330 ft. N line, lease. Sur. 403. R.U.

Gilcrease Oil Co. No. 1 Sullivan, 330 ft. N and E lines, 140.13-ac. tr., Thos. Gallagher Sur. Cg. 3,182 ft.

L. Glasscock No. 1 Glover Johns, W. S. McGregor Sur. 582. Drlg. 5,117 ft.

Great States Oil Co. No. 2 Humphreys, 988 ft. W line, 330 ft. S line, Stevens Sur. 406. Location.

A. F. Holliday No. 3 Griffith, 330 ft. N and E lines, 99.79-ac. tr., Frank Sur. 416. Sd. 5,816-30 ft. Set csg. 5,818 ft. W.O.C.

A. F. Holliday No. 4 Griffith, 330 ft. N line, 1,047 ft. W No. 3, Franks Sur. 416. Set sur. csg. 1,200 ft. W.O.C.

A. F. Holliday No. 4 Hutchins-Stillwell, 330 ft. S and W lines, Blk. 30, Sheppard Farm Lands. Drlg. 5,621 ft.

A. F. Holliday No. 3 Hutchins, sec. 30. Blew out and ran wild; controlled. Setting csg. T.D. 5,810 ft.

Houston Oil Co. No. 4 Harrell, Blk. 19, Sheppard Farm Lots. Set csg. 1,016 ft. W.O.C.

Houston Oil Co. No. 1 McGregor, 800 ft. N line, 1,450 ft. W line, Sur. 311. (Workover) Derrick.

Houston Oil Co. No. 2 McGregor, Sur. 311 (rework); oil sd. 5,818-16 ft.; made gas and dist. Plg. screen and liner to deepen.

Houston Oil Co. No. 11 Rand Morgan sec. 7, Rge. 5. Sd. 4,876-86 ft. Completing.

Frank Jones No. 1 Carson, 330 ft. N line, 800 ft. E line, Sur. 500 (old Viola No. 1) workover. T.D. 4,902 ft. R.U. to deepen.

Mills Bennett Prod. Co. No. 1 Ordner, 330 ft. S and E lines, 210-ac. tr., Sur. 410. Drlg. 2,160 ft.

Morgan Gulf Oil Co. No. 4-A Rand Morgan, 330 ft. N line, 1,650 ft. E line, B.S.&F. Sur. 403. Sd. 5,806-24 ft. Setting csg. W.O.C.

Morgan Gulf Oil Co. and Great States Oil Co. No. 1 Humphreys, 330 ft. S line, 990 ft. W line, Stevens Sur. 406. Drlg. 5,652 ft.

North Star Oil Co. No. 2 Bliss, 990 ft. N & W lines, 109-ac. tr., Stevens Sur. 406. Derrick.

North Star Oil Co. No. 2 Rand Morgan, 330 ft. S line, 1,650 ft. E line, B.S.&F. Sur. 405. Drlg. 4,711 ft.

North Star Oil Co. & Morgan Gulf Oil Co. No. 1-G Rand Morgan, 330 ft. N line, 250 ft. E line, Sur. 403. M.I.M.

Phillips Pet. Co. No. 3 Hutchins, 330 ft. N and W lines, Blk. 19, Sheppard Farm Lots. No report.

W. A. Richardson No. 1 W. S. Hutchins (workover), 330 ft. S and E lines, 80-ac. tr., Sh. 2, Frank Sur. 416 Sd. 5,881-98 ft. Tested s. w. W.O. orders.

Richardson Petroleum Co. No. 4 Perkins & LaGasse, 330 ft. W lines, 296 ft. N line, Blk. 26, Sheppard Farm Lots, Sur. 406. Drlg. 750 ft.

Richardson Petroleum Co. No. 3 Quiros, 660 ft. E of No. 2. R.U.

Shell Pet. Corp. No. 3 Flato, 330 ft. E and S lines lease, 40-ac. tr., I. Dunn Sur. D.S.T. 4,541-48 ft. 520 ft. oil 10 min. Fsg.

Sinclair Prairie Oil Co. No. 2 Isensee, 330 ft. S and E lines, 80-ac. tr., C. Land Sur. 404. Csg. collpsd.; milling 1,046 ft.

Southern Minerals Corp. No. 5 Isensee, 330 ft. N and W lines tr., Sur. 404. Spd in.

Southern Minerals Corp. No. 2 Rand Morgan, Blk. 42, Roberts Subd. T.D. 6,005 ft. D.&A.

Southern Minerals Corp. No. 5 Bliss, S offset Conroe No. 1 Bliss. Drlg. 2,187 f

Southern Minerals Corp. No. 6 Bliss, S offset Holliday No. 2 Griffith. Drlg. 3,739 ft.

Southern Minerals Corp. No. 7 Bliss, 330 ft. S & W lines, tr., Stevens Sur. M.I.M.

Southern Minerals Corp. No. 2 Mastin, 125-ac. tr., G. Frank Sur. 416. Cg. 5,-810 ft.

Southern Minerals Corp. No. 6 Smith, Blk. 4, Sheppard Farm Lots. Comp. 161 B.P.D. on 5/32-in. choke. Sd. 4,414-30 ft.

Texon Drilling Co. No. 2 Isensee, 150 ft. N line, 112 ft. W line, 13.44-ac. tr., C. Land Sur. 404. Spudded.

Texon Drlg. Co. No. 2 Lingnau, 150 ft. N line, 112 ft. W line, 13.44-ac. tr., C. Land Sur. 404. Set csg. 132 ft. W.O.C.

Texon Royalty Co. No. 1 McElroy, 115 ft. N line, 100 ft. W line, 40-ac. tr., Gallagher Sur. Sd. 4,412-15 ft. Comp. 147 B.P.D. on 7/64 inch choke.

W. A. R. Oil Co. No. 1 Hutchins, 80-ac. tr., Sh. 2, Frank Sur. 416 (old Capps No. 1, workover). Sd. 5,881-98 ft., s.w. S.D. W.O. orders.

Wynne Drlg. Co. No. 1 Rand Morgan, 1,650 ft. N line, 330 ft. W line, 235.5-ac. tr., Sur. 315. Set sur. csg. 990 ft. W.O.C.

Plymouth—San Patricio County

Centennial Oil Co. No. 2 State of Texas, Tract 3, 640 ft. S and 46 deg., 51 min. E of Plymouth O. Co. No. 23-C Welder. Set csg. 394 ft. W.O.C.

Humble O. & R. Co. No. 2 Bevly, 466 ft. N line, 315 ft. E line, Blk. 8, Sur. 35. T.D. 5,645 ft. Comp. 147 B.P.D. on 9/64 inch choke.

Plymouth Oil Co. No. 49-C Welder, 331 ft. N line, 1,107 ft. W line, sec. 49. Testing 5,653 ft.

Plymouth Oil Co. No. 50-C Welder, 526 ft. S line, 1,427 ft. W line, sec. 50, testing 5,666 ft.

Plymouth Oil Co. No. 51-C Welder, 1,169 ft. N line, 256 ft. E line, sec. 49. Drlg. sh. and lime 3,762 ft.

Plymouth Oil Co. No. 52-C Welder, 280 ft. N line, 1,188 ft. E line, sec. 49. Set sur. csg. 350 ft. W.O.C.

Sun Oil Co. No. 3 Edgar, 466 ft. E line, 446 ft. N line lse., Blk. 1, sec. 34. Drlg. 1,930 ft.

Sun Oil Co. No. 7 Hunt, 466 ft. S and E lines, Lot 5, sec. 34, Taft Farm Lands Subd. T.D. 5,645 ft.; comp. 224 B.P.D. on 5/32 inch choke.

Sun Oil Co. No. 1 Jackson, 466 ft. N line, 315 ft. W line tr., E½ W½ sec. 35, J. Fessenden Sur. M.I.M.

Taft Field—San Patricio County

Cage Prod. Co. No. 1 Mayo, Tabor Sur. Sd. 3,962-74 ft., comp. 260 B.P.D. on 3/16 inch choke.

Humble O. & R. Co. No. 3 Mayo, Tabor Sur. Set csg. 4,919 ft.; W.O.C.

Shell Pet. Corp. No. 2 Pullin, 705 ft. N line, 498 ft. E line lease, Blk. 4, 2nd Addn. Drlg. sh. 2,917 ft.

Margo—Starr County

Harter et al No. 2 Sanchez, 150 ft. S and W lines, 29.72-ac. tr., Sh. 72, Porc. 72, (workover) Cg. 1,020 ft.

Rio Grande City—Starr County

Fech Oil Co. No. 9 Frank Doyno, 150 ft. N and E lines, Blk. 4, Tr. 77-A, Porc. 81. Set csg. 1,429 ft. Comp. 60 B.P.D. T.D. 1,445½ ft.

Moss & Bass No. 1 Frank Doyno, Blk. 3, Tract 77-A. Drlg. 259 ft.

Sioux Oil Corp. No. 3 Frank Doyno, 150 ft. N and W lines, Blk. 3, Tr. 77-A, Porc. 81. M.I.M.

Samfordyce—Starr County

Porter & Grimes No. 2 Garcia Land & Livestock Co., Lot 1, W½, Porc. 100. Perf. 2,494-97 ft.; comp. 35 B.P.H. on ⅛-in. choke.

Lopez—Webb County

Gem Oil Co. No. 1 Peal, Sur. 72. Loc.

Magnolia Pet. Co. No. 2 Peal, 660 ft. N of No. 1, Sur. 383. R.U.

Mills Bennett Prod. Co. No. 11 M. L. Lopez, Sur. 112. Comp. 20 B.P.H. T.D. 2,237 ft.

Mills Bennett Prod. Co. No. 9 Maria Lopez, Sur. 112. Set csg. 2,225 ft. Sd. 2,215-36 ft. Comp. 22 B.P.H. on ½-in. choke.

Mills Bennett Prod. Co. No. 10 Maria Lopez, Sur. 112. Sd. 2,215-24 ft. Comp. 20 B.P.H. on ½-in. choke.

Mills Bennett Prod. Co. No. 6 Valadez, Sur. 111. Drlg. 1,235 ft.

Mortimer & Springer No. 1 F. L. Garcia, Sur. 112. Drlg. 1,126 ft.

Mortimer & Springer No. 2 J. Lopez, Sur. 73. M.I.M.

Mortimer & Springer No. 1 Peal, Sur. 72. Location.

Mortimer & Springer No. 12-B Maria Lopez, Sur. 112. Comp. 21 B.P.H. on ½-in. ck.; sd. 2,226-51 ft.

Starr Dev. Co. No. 1 Peal, Sur. 796. M.I.M.

Superior Oil Co. No. 8 Billings, Sur. 109. Comp. 25 B.P.H. T.D. 2,250 ft.

Superior Oil Co. No. 9 W. C. Billings, Sur. 109. Sd. 2,236-57 ft.; comp. 30 B.P.H.; ½-in. ck.

Superior Oil Co. No. 10 Billings, Sur. 109. T.D. 2,259 ft., testing.

O'Hern—Webb County

Magnolia Pet. Co. No. 16 Seacord-Benavides, C Blk. 495, Hale Subd. T.D. 2,917 ft. Swabbing in.

Magnolia Pet. Co. No. 9, Servando Benavides, C Lot 6, Blk. 174. Skddg. on.

J. J. O'Hern No 2-A Benavides, Hale Subd., Arispe Grant. Sd. 2,844-57 ft. Comp. 80 B.P.D.

J. J. O'Hern No. 3-A Benavides, Blk. 493, Hale Subd. Drlg. 2,442 ft.

T. S. Reed No. 4 Brennan Benavides, cen. Blk. 364, Hale Subd. Comp. 20 B.P.H. T.D. 2,894 ft.

T. S. Reed, No. 5 Brennan Benavides, cen. Blk. 363, Hale Subd. Swbg. in. T.D. 2,-948 ft.

Texia Oil Corp. No. 4-D Brennan Benavides, cen. Blk. 387, Hale Subd. Drlg. 1,885 ft.

Escobas—Zapata County

R. A. Mitchell No. 1 Bustamente, Share 32, Comitas gr. T.D. 1,000 ft. D.&A.

B. W. Roscoe No. 4 Bustamante, Share 33. Sd. 1,380-88 ft.; S.D.; T.D. 1,388 ft.

Texas Co. No. 90 Whitehead, Cerrito Blanco Grant. T.D. 1,278 ft., 860 ft. fluid in hole. Cleaning.

Haynes—Zapata County

Clover Oil & Gas Co. No. 15 Haynes, Blk. 7, Haynes Subd. Rng. tbg. 896 ft.

Gilcrease Oil Co. No. 3-B Haynes, Blk. 4, Haynes Subd. Cg. sh. 1,952 ft.

Upchurch & McKay No. 1 Haynes, Blk. 7, Haynes Subd. Comp. 37 B.P.D. T.D. 987 ft.

Upchurch & McKay No. 3 Haynes, Blk. 7, Haynes Subd. Sd. 840-54 ft. Comp. 43 B.P.D.

Upchurch & McKay No. 4 Haynes, Blk. 7, Haynes Subd. Set csg. 853 ft. W.O.C.

WEST TEXAS WILDCATS

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Fsg. 2,220 ft.

Cochran County

Cascade and Honolulu Oil Corp. No. 1 E. B. Duggan, cen. Labour 13, League 55, Oldham County Sch. Land. T.D. 232 ft.

Crane County

Gulf Oil Corp. No. 2 W. N. Waddell, sec. 18, Blk. B-21. Drlg. 3,850 ft.

Gulf Oil Corp. No. 3 Tubbs, sec. 12, Blk. 27-B. Drlg. 3,424 ft.

Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. Loc.

Loffland Bros. No. 2 Tubbs, sec. 9, B-27. Drlg. 400 ft.

J. E. Lucas No. 1 Pershing, sec. 1, Blk. 31, H.&T.C. Sur. R.U., mch.

Moore Bros. No. 1 Barnsley, sec. 43, Blk. 32, P.S.L. Sur. S.D. 4,875 ft.

Rider et al No. 1 Thaxton, sec. 2, W. L. Wilkenson Sur. Spudded and S.D.

Crockett County

John I. Moore No. 1 A. C. Hoover, sec. 4, Blk. FF, B.&B. Sur. S.D. 1,255 ft.

Ector County

Grisham-Hunter Corp. No. 1 R. B. Cowden, C of SE¼, sec. 10, Blk. 45, Twp. 2n, T.&P. Sur. Drlg. 1,280 ft.

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless. Fsg. 553 ft.

Ellis & Eubanks No. 1 C. C. Wourland, sec. 15, Blk. 21, T.&P. Sur. Drlg. 561 ft.

Forest Dev. Co. No. 1 A. M. Dry, sec. 108, Blk. 2, H.&T.C. Sur. S.D. 3,500 ft. S.R.

Gaines County

Humble O. & R. Co. No. 1 W. Eubanks, 660 ft. S and W, sec. 6, Blk. AX. Rotary rig.

Landreth Prod. Co. No. 1 Kirk, sec. 32, A-21, T.D. 4,789 ft.; ran csg. and tbg. to test.

Garza County

Brown Eagle Oil Co. No. 1 Sullivan, sec. 3, S. C. Harper Sur., Blk. H. Drlg. 1,818 ft.

M. L. Richards No. 1 U. U. Post est., sec. 1,232, D. L. Phillips Sur. S.D. 440 ft.

Hudspeth County

Costelle Oil Corp. No. 1 Costelle, SW cor. sec. 36, Blk. 70, elev. 4,075 ft. Loc.

Hayman Krupp Oil & Land Co. No. 1 Thaxton, sec. 34, Blk. 74, Twp. 6, T.&P. Sur. T.D. 1,131 ft.; U.R. csg.

Jeff Davis County

C. M. Joiner No. 1 Jones & Coffield, sec. 8, Blk. 3, H.&T.C. Sur. Drlg. 4,200 ft.

Jones County

Consolidated Oil Co. No. 1 Hamilton, sec. 21, Blk. 4, H.&T.C. Sur. Loc.

Parker No. 1 C. L. Brown, sec. 9, Blk. 2, T.&N.O. Sur. T.D. 2,132 ft.; U.R. csg.

W. K. Woods et al No. 1 McCright, sec. 14, O.A.L. Sur. Spudded and S.D.

Kimble County

Wilcox O. & G. Co. No. 1 H. Spiller, sec. 15, Brooks & Burleson Sur., Abst. 80. Derrick.

Loving County

Evans No. 1 Johnson. Wtr. shut-off; T.D. 3,214 ft. Swabbing and testing.

Pecos County

Dobbs Oil Co. No. 1 Rooney, sec. 12, Blk. 125, T.&St.L. Sur. Fsg. 2,060 ft.

E. R. Minshall, No. 1 Banker, sec. 25, Blk. 146, T.&St.L. Sur. Drlg. 445 ft.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 1,328 ft.

Presidio County

Linderman Bros. Oil Corp. No. 1 J. R. Bledsoe & Badgley, sec. 15, Blk. 351, G.C.&S.F. R.R. Co. Sur., 2½ mil. NE of Presidio. T.D. 1,635 ft.

Schleicher County

Cardinal Oil Co. et al No. 1 J. A. Whitten, sec. 35, Blk. LL, T.C.R.R. Sur. S.D. 4,702 ft.

Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; S.G. 4,350 ft.; gas sd. 4,956-58 ft.; T.D. 6,527 ft.; P.B. to 5,900 ft.

Taylor County

Geo. Callahan No. 1 S. J. Writer. Drlg. 2,108 ft.

A. R. Forrester No. 1 O. A. Prescher, 150 ft. N and 1,470 ft. E, sec. 14, Blk. 86, J. R. Shipman Sur. R.U. mach.

Terry County

J. A. Estes No. 1 F. B. Graham, sec. 23, Blk. T, O.&W.R.R. Machine.

Tom Green County

Spinner No. 1 Reed, Sub. 39, Mason & Perry Sur. T.D. 2,235 ft.; to set csg.

E. E. Webb No. 1 D. B. Horn, sec. 137, Washington Co. R.R. Sur. Spudded.

Upton County

Prewer & Smith No. 1 Cordova Union, 330 ft. N and 3,750 ft. W line of A. E. Boxley Sur., sec. 2, Loc.

P. Fox No. 1 Cordova Union, sec. 17, Blk. 1, M.K.&T. Drlg. 531 ft.

G. P. McCamey No. 1 Cordova Union, 2,970 ft. S and 2,310 ft. E, sec. 19, Blk. 1, M.K.&T. Sur. R.U. mach.

Ward County

Gulf Oil Corp. No. 1 W. A. Estes, sec. 38, Blk. 34, H.&T.C. Sur. T.D. 2,425 ft.; C.O.

P. Moran et al No. 1 Reynolds, sec. 12, Blk. 5, H.&T.C. Sur. S.D. 620 ft.

Peck et al No. 2 Reynolds, sec. 12, Blk. 32, H.&T.C. Sur. Drlg. 1,815 ft.

Winkler County

Herbert Oil Co. No. 1 I. Hendrick, sec. 14, Blk. 26, S.D. 3,031 ft.; flwg. 30 B.P.D.

Humble O. & R. Co. No. 2-C Walton, sec. 24, Blk. 74, P.S.L. Sur. Drlg. 2,978 ft.

Fred Hyer No. 1 Evans, sec. 8, Blk. 56, S.D. 4,455 ft.

Joiner No. 1 Evans, sec. 46, Blk. 73, P.S.L. Sur. Drlg. 3,732 ft.

Navarro Oil Co. No. 1 Drane, tr., sec. 35, Blk. 26, P.S.L. Drlg. 1,437 ft.

Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. Spudded.

Yoakum County

Bahan et al No. 1 Henard, C SW ¼, sec. 367, Blk. D, J. H. Gibson Sur. T.D. 2,390 ft.; standardizing.

Stogner et al No. 1 Roosevelt, sec. 215, Blk. D, John H. Gibson Sur. Drlg. 712 ft.

E. C. TEXAS WILDCATS

Anderson County

Gulf Oil Corp. No. 1 Ross, Robt. Irwin Sur., elev. 487 ft. Drlg. 6,026 ft.

Angelina County

G. E. Ginter No. 1 Martin Wagon Works E. Evans Sur., 2 mi. W of Homer. Spdd.

Bill La Rue No. 1 Cameron Lbr. Co., I. Ray Sur. Top sd. 1,340 ft.; S.D. 1,354 ft.

Ginter et al No. 1 Cope hrs., Jose Moron Sur., 3 mi. E of Dibol. Drlg. 2,035 ft.

W. A. Stone et al 1 Southern Pine Lbr. Co., 3,081 ft. E and 7,150 ft. S. B. J. Thompson Sur. 8 miles SE Lufkin. R.U.

Bowie County

Chew et al No. 1 B. Barkman, 300 ft. S and 1,320 ft. E. in J. W. Barkman Sur., 2½ mi. N of Leary. Set sur. pipe 64 ft.

Ferguson et al No. 1 A. Y. Breckenridge, 1,560 ft. N and 2,100 ft. E line of N. Dycas Sur., 4 mi. W of Texarkana. S.D. 60 ft.

Westmount Oil Co. No. 1 R. N. Phillips, G. N. Hancock Sur., 10 mi. N of Oak Grove, top Georgetown 1,533 ft. Drlg. 3,675 ft.

Cherokee County

T. J. Wood et al No. 1 Huggins, L. Jordan Sur., 2 mi. SW of discovery, or 7 mi. SW of Rusk. Pecan Gap 4,039-4,470 ft. Top Austin 4,935 ft. Drlg. 4,960 ft.

Fannin County

Carter, Trustee, No. 1 Galloway, Georgetown L. 1,697-2,203 ft.; top Georgetown 2,203 ft. S.D. 2,258 ft.

Franklin County

Earl Bateman et al No. 1 Phillips. Drlg. 2,100 ft.

E. Bateman et al No. 1-E Phillips, 150 ft. from N and W of N 38½ acres of 77-ac. tract, Wm. Birdwell Sur., 4 mi. SW Talco. S.D. 4,085 ft. Top Georgetown lime 3,510 ft.

J. B. Bond et al 2 Sanders, 500 ft. E and 150 ft. N of E 42.3 ac. of 84.6-ac. tr., W. F. Dyer Sur. S.D. 105 ft.

J. DeGrazer et al No. 1 F. N. Bates, 150 ft. N and E. F. M. Bates Sur. E line 356. Drk.

Straube & Straube No. 1 B. Norman, 330 ft. N and E of E½ of 255.53-ac. tract, M.E.P.&P. Sur. Loc.

Freestone County

Tom Sharp et al No. 1 E. E. Lamb, 2,935 ft. N and 225 ft. E. Jas. Sparks Sur., 3 miles SE of Streetman. M.I.R.

Grayson County

Olson Drlg. Co. No. 1 Southwestern Life Ins. Co., J. C. Jamison Sur., 6 miles NW of Denison. Elev. 767 ft. Top Viola 4,901 ft.; T.D. 5,890 ft.; drilled out to 5,400 ft.

Henderson County

McDougal et al No. 1 E. Price, M. Mathews Sur., 4 mi. S of Trinidad. Rig.

Hopkins County

D. Hager et al No. 1 J. Worshorn, A. Whitmore Sur. S.D. 106 ft.

Kaufman County

Lester & Duffield No. 1 D. C. Baron, J. T. Taylor Sur., 8 mi. NE of Elmo. T.D. 3,720 ft. P.B. to 2,900 ft.

Scott & Woodside No. 1 Robinson, A. Cherino Sur., 2 mi. W of Scurry. Austin chalk 1,200 ft.; top Woodbine 2,158 ft. Drlg. 2,375 ft.

Limestone County

C. L. Lytle No. 1 J. L. Thompson, P. Varella Sur., Mexia field. T.D. 6,054 ft.; P.B. 5,880 ft. Perforated liner.

Red River County

Abercrombie-Harrison No. 1 Temple Lbr. Co., D. D. Bruton Sur., 10 mi. NE of Clarksville. Base Georgetown 1,920 ft.; drlg. 2,266 ft.

Williams et al No. 1 L. and O. Roberts, James Bankston Sur., 2 miles NE of Annona. Elev. 396 ft.; S.D. 725 ft.

Rusk County

D'Arman et al No. 1 R. E. Talliferro, T. L. Wilkshire, 5 mi. W of Henderson. Drlg. 3,606 ft.

McCallum et al No. 1 E. C. Gary, John Piburn Sur., 5 mi. S of Henderson. Elev. 338 ft.; S.D. 3,440 ft.

Pure Oil Co. No. 1 W. H. Faulkner, Wm. Elliott Sur., S of Concord. Elev. 563 ft. T.D. 6,297 ft.; to retest.

Titus County

Jule Alford No. 2 Fry, I. P. Stern Sur., 1,313 ft. N of No. 1 Pecan Gap 1,437 ft. Drlg. 3,375 ft.

Dean & Atkisson No. 1 A. Cornelius, Delgado Sur. Drlg. 2,980 ft.

Hollingsworth Drlg. Co. No. 1 A. O. Brown, cen. Lot 1, Blk. 41, Delgado Sur. Drlg. 3,646 ft.

Jones & Shelburne No. 1 Hazelwood, Stern Sur. Top Georgetown 3,511 ft., drlg. 4,272 ft.

Nivia Oil Co. No. 1 J. N. Kelley, J. Holman Sur. Top sand 4,228 ft. Drlg. 4,315 ft.

A. M. Peairs No. 1 L. Sanders, C of Lot 1, Blk. 30, Talco Townsite. Drlg. 3,100 ft.

Stroube & Stroube No. 1 S. E. Strutton, 370 ft. N and C of E. and W lines of 50-ac. tract, M.E.P.&P. Sur., 6 mi. E of Talco. Rig.

Tide Water Oil Co. No. 1 Carr, M. V. Delgado Sur. Elev. 358 ft. Drlg. 4,345 ft.

EAST TEXAS

(Border Counties)

Bowie County

Fay T. Chew et al No. 1 Barkman, John Parkman Sur. Sur. pipe set; W.O.C.S.

Westmont Oil Co. No. 1 Phillips, J. W. Hancock Sur. Coring 3,510 ft.

Cass County

American Liberty Oil Co. No. 4 Maxie, John Collum Sur. Comp.; flw. 40 B.P.H.; ½-in. tbg. ck.; T.D. 6,006 ft.; 5-in. 5,972 ft.

American Liberty Oil Co. No. 5 Maxie, 660 ft. NW of No. 2 and 660 ft. NE of No. 3 Maxie, John Collom Sur. Loc.

American Liberty Oil Co. No. 6 Maxie, 330 ft. S and 990 ft. W, NE cor. of lse., John Collom Sur. Loc.

American Liberty Oil Co. No. 7 Maxie, 330 ft. from N and E lines of lse., John Collom Sur. Loc.

W. F. Lacy et al No. 1 Baugus, J. H. Rives Sur. 16-in. 258 ft.; drlg. 3,434 ft.

Marathon Oil Co. No. 1 R. P. Willis, S.F. I.W. Sur. Drlg. 4,256 ft.

R. W. Norton No. 1 W. M. Hall, 330 ft. S and 697 ft. W, NE cor. 100 acs., W. Robinson Sur. No. 907. Drlg. 3,776 ft.

R. W. Norton No. 1 A. S. Hall, 334 ft. S and 2,091 ft. E, NW cor. 160 acs., James Young Sur. Drlg. 5,507 ft.

R. W. Norton No. 3 Haywood, on Priscilla Evans Sur. Drlg. 3,120 ft.

R. W. Norton No. 2 Mary Rives, John Collom Sur. Cg. 6,003 ft.

Showers & Moncrief Co. No. 1 Stallcup, J. Davenport Sur. Drlg. 4,255 ft.

Superior Oil Co. No. 1 Stallcup, 330 ft. N of S line and middle E and W of 20 ac., Robert Trammel Sur. Drlg. 5,136 ft.

Texas Co. No. 3 E. E. Hall, 563 ft. S of No. 1, James Young Sur. Loc.

United Gas Pub. Ser. Co. No. 1 L. J. Cunningham, W. Robinson Sur. Drlg. 5,580 ft.

United Prod. Corp. No. 1 Bivens, on John Collum Sur. Loc.

United Prod. Corp. No. 2 E. J. Cunningham, on Wilson Robinson Sur. Drlg. 2,467 ft.

United Prod. Corp. No. 2 E. Tyson Unit, J. H. Rives Sur. 9-in. csg. cmt. 220 ft. W.O.C.S.

United Gas Pub. Ser. Co. No. 2 F. S. Simpson, 2,091 ft. E and 334 ft. N, SW cor. of 160 ac., James Young Sur. Drlg. 4,766 ft.

United No. 1-A E. Tyson Unit, J. H. Rives Sur. 13-in. 315 ft.; 9-in. 2,200 ft.; drlg. 4,616 ft.

Harrison County

W. F. Bridewell et al No. 1 Clapp, F. C. Baker Sur. T.D. 2,406 ft.; ckly. l.; top 2,382 ft.; acid 2,000 gals.; swabbed dry. S.D. for orders. May D.D.

Panola County

Logansport P. L. Corp. No. 1 Rushing, M. Smith Sur. Coring sdy. lime 2,585-97 ft. Small show oil.

NORTH TEXAS WILDCATS

Archer County

Consolidated Oil Co. No. 1 Portwood, T.E. &L. 2,412. Drlg. 1,300 ft.

Continental Oil Co. No. 1 Claud Cowan, Blk. 6, J.C.S.L. Drlg. 1,022 ft.

Continental Oil Co. No. 1 Kinder, sec. 58, Blk. 5, C.&P. Subd. Drlg. 2,100 ft.

Kemp & Waggoner No. 1 Wilson, Blk. 75, A.T.N.C.L. Drlg. 2,200 ft.

M. T. McLaughlin No. 1 Lemons, A. Nunley A-320. Location.

J. T. Miller No. 1 Rogers, T.E.&L. 2,407. Drlg. 1,100 ft.

Clay County

Golding & Cochran No. 1 Ben Nutter, Blk. 30, G.C.S.L. R.U.R

Cooke County

Jas. L. Anderson No. 1 Bruhlmeyer, H. Strong A-930. 1,700 ft. fluid 5 hrs., testing.

Anderson & Kerr No. 1 A. Wilson, Strong Sur. A-930. S.D.O. 2,390 ft.

J. G. Beard et al No. 1 R. S. Rose, T. E. Hardeway A-464. 6⅝-in. 1,937 ft. S.S.O. 1,937-43. W.O.C.

Cain & Chandler No. 1 J. B. Burch, J. McWilliams Sur. A-658. S.D. 1,065 ft.

Fain-McGaha No. 1 J. W. Mount, sec. 9, S.P.R.R. Drlg. 1,610 ft.

Joe Grazier No. 1 E. P. Bell, F. J. Lindheimer Sur. A-571. Loc.

Hardin Oil Co. No. 1 J. G. Bonner, J. Lindheimer Sur. S.D.O. 2,308 ft.

B. H. Hilburn No. 1 Hugan, A. Myers Sur. No. A-640. Drlg. 1,575 ft.

Homarado Oil Co. No. 1 H. D. Field, J. B. McClyman A-735, 6⅝-in. 1,216 ft. W.O.C.

W. M. Johnson No. 1 G. M. Smith, J. Boyle A-88. Drlg. 200 ft.

Joseph Oil Co. No. 1 Wm. Bergman, John Barnett A-12. Location.

A. N. Landes No. 1 Mrs. O. Wilson, E. Reed A-849. Loc.

Mills & Carey No. 1 Bezner, J. B. Trenary A-1,043. R.U.S.

Nair Oil Corp. No. 1 W. G. England, E. G. Spencer. S.D. 1,360 ft.

N. Newburn No. 1 Dotson, Wm. Campbell Sur. A-238. S.D.O. 1,710 ft.

Nixon Bros. No. 1 W. R. Harper, W. W. Pettit Sur. A-812. Material.

E. R. Robison No. 1 J. Krebs, H. Wilkey Sur. A-1,090. Drlg. 998 ft.

Seitz, Comegys & Seitz No. 1 Field & Bowers, L. Raney Sur. A-878. Drlg. 3,251 ft.

J. C. Shaffer No. 1 Wilson, H. Strong A-930. S.D. 2,060-68 ft., testing.

Wertheimer et al No. 1 W. A. Erwin, J. Armendaris A-1,234. R.U.R.

Whitehead et al No. 1 W. Reed, F. Earthman Sur. A-349. S.D.O. 1,230 ft.

Woodbine Oil Co. No. 1 Potter & Potter, J. Gorham Sur. S.D. 997 ft.

Denton County

Oil Finance Corp. No. 1 J. S. Gambill, T. Burress Sur. S.D. 1,042 ft.

C. S. Hoad No. 1 Travelers Insurance Co., Wm. A. Thompson Sur. A-1,238. Drlg. Drlg. 1,684 ft.

Manning & Moore No. 1 E. L. Darnell, T. Walters Sur. A-1,329. Drlg. 2,025 ft.

Foard County

Humble O. & R. Co. No. 1 Burnett, sec. 16, Blk. X, S.P.R.R. Sur. Drlg. 3,410 ft.

Jack County

J. W. Campbell No. 1 W. J. Cannon, E. P. Costen A-1,825. Drlg. 740 ft.

S. B. Edwards No. 1 Bryson, J. Hughson Sur. A-256. U.R. pipe 560 ft.

W. H. Hammon No. 1 G. E. Evett, H. Plaster Sur. S.D. 750 ft.

W. H. Hammon No. 1 Kuykendall, B.S.&F. A-1,720. Location.

Harper Pet. Corp. No. 1 Van Hooser, J. W. Morrow Sur. A-1,926. S.D.O. 2,070 ft. H.F.W.

C. Kadane No. 1 E. F. Smith, S.P.R.R. Sur. A-522. S.D.O. 1,715 ft.

C. A. Montgomery No. 1 J. T. Roney, T.E. &L. 3,320. Location.

Sternteax Oil Co. No. 1 Boyd, J. N. Wright Sur. A-898. Fishing swab 3,367 ft.

Montague County

Bowden et al No. 1 Buck Est., D. F. Mallard A-925. S.D. 200 ft.

Grisso Royalty Co. No. 1 Jordon, T. R. Jackson A-394. Drlg. 2,410 ft.

E. T. Hart No. 1 W. L. Davis, sec. 12, Jack Co. School Lds. Drk.

Jim Seeds et al No. 1 Coombs, sec. 58, M.E.P.&P. Sur. S.D. 2,106 ft.

J. M. Holmes No. 1 H. D. Field, sec. 55, M.E.P.&P. Sur. A-528. S.D.

Sinclair Prairie Oil Co. No. 1 Holt Est., Blk. 45, K.C.S.L. Loc.

R. Franklin Smith No. 1 Cora Hurd, E. Ballinger Sur. Location.

Southwest Pet. Co. No. 1 W. S. Petty, S. A. Southerlin Sur. A-992. Spud. and S.D.

Wichita County

Pete Harmon et al No. 1 J. B. Jamison, J. Deck Sur. A-52. Drlg. 1,520 ft.

J. M. Morton No. 1 Housler, J. C. Pike, A-509. R.U.R.

Reno Oil Co. No. 1 W. T. Waggoner-D, sec. 1, S.&M. Sur. A-393. Fsg. 1,576 ft.

J. M. Seaberry No. 1 Guggenheim, sec. 15, Cherokee Co. Sch. Lds. Drlg. 470 ft.

Wilbarger County

Franklin Oil Co. No. 1 D. G. Feller, et al, sec. 108, Blk. 14, H.&T.C. Sur. S.D. 1,570 ft.

Pettit et al No. 1 Castleberry, sec. 67, H. &T.C. Sur., Blk. 14. Drlg. 670 ft.

Smith No. 1 S. A. Dill et al, sec. 32, Blk. 14, H.&T.C. Sur. Drlg. 2,101 ft.

Webb & Rogers No. 1 Mrs. D. Coffee, sec. 44, H.&T.C., Blk. 15. Spudded.

Young County

Associated Developers No. 1 Terrell, T.E. &L. 285. Drlg. 2,510 ft.

Art Cox No. 1 J. T. Rogers, J. Ray D. 1,628. Loc.; 4,500-ft. test.

Curtis & Bracken No. 1 Allar Co., H. Garmes Sur. A-104. Fsg.; T.D. 4,400 ft.

Hinson Tidwell No. 1 Thompson. Drlg. 2,650 ft.

D. M. Knox No. 5 Burkett, T.E.&L. 3,412. Drlg. 900 ft.

Chas. Knox No. 2 Worsham, T.E.&L. 3,407. Loc.

C. D. Neff et al No. 1 W. A. Dennis, C. F. Bass Sur. T.D. 3,692 ft.; C.O.

Pitzer West et al No. 1 W. R. Dollins, T.E. &L. Sur. 615. Spudding.

Rathke Oil Co. No. 1 O. W. Hill, J. C. Graham A-122. R.U.R.

Rathke Oil Co. No. 2 J. T. Rogers, S. H. Graham Sur. A-124. Cem. 6⅝-in. 3,587 ft. W.O.C.

Texas Co. No. 1 Stephens, T.E.&L. 1,985. Tstg. Sandy lime 4,057-59 ft., est. 500,000 ft. gas, 6⅝-in. cem. 4,020 ft. W.O.C.

Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hill, A-151. Drk.

Texas and Louisiana Gulf

FOUR POOLS IN PROSPECT IN SCATTERED COASTAL AREAS

By
F. L. SINGLETON

HOUSTON, Tex., June 23.—Four new fields were in the making on the Gulf Coast as the week opened. Sun Oil Co. Monday was making drill stem tests in its No. 1 Craig, at Hawkinsville, Matagorda County, and its No. 1 Hughes at Green Lake, Galveston County, both of which wildcats have shown for producers but in which operators have been attempting to cement-off water. At Nome, western Jefferson County, Shell Petroleum Corp. made a drill stem test of an oil showing sand at 6,005-22 feet in its No. 1 Carpenter which indicated the existence of another new field on that prospect, and at Big Lake, Cameron Parish, La., Magnolia Petroleum Co., was due to complete its No. 1 Alvin Hebert in sand at 8,608-18 feet as the first oil producer of that prospect.

Texas Gulf Producing Co. and Bunte Oil & Gas Co. No. 1 Sparks, a wildcat in the William Roberts Survey, west of Angleton, Brazoria County, tested salt water after perforating 5-inch pipe at 5,693-5,700 feet, and is being abandoned. This wildcat was drilled first to 7,525 feet in the Oligocene and was to have been abandoned at that depth but when an electrical coring survey was made showing the 5,700-foot sand in the Miocene, casing was run with a view toward testing it. The casing was cemented at 5,872 feet.

Since Saturday two drill stem tests have been attempted in the Hawkinsville wildcat, the tests being through 40 perforations in the 9⅝-inch casing at 5,150-75 feet. In the first, the tool was opened two hours, and 10 stands of oil and salt water were recovered. In the second, made today, the tool was open three hours, and three stands of mud and oil were recovered. This has led the operators to believe that the perforations are sealed with cement, which was "squeezed" into the formation through the perforations to shut off water. A swab will be run and if this does not break the cement from the perforations, efforts will be made to mill out of the casing above and sidetrack a new hole to the sand.

In a drill stem test early last week the well flowed approximately 300 bbls. of 30.4 gravity pipe line oil in about 20 hours, before sanding up. When the drill pipe and testing tool were pulled, 23 stands of salt water were recovered, which led operators to attempt the "squeeze" job, and 100 sacks of cement were pumped through the perforations.

Hawkinsville is a proven salt dome and a number of tests have been drilled on it but this is the first to find production. Other tests were comparatively shallow. Location of the present well is on the east flank. Sand is Miocene.

In the Green Lake wildcat, another drill stem test is under way but no results are available as this is written. The well was killed June 17 when, for the second time, water showed up in a flowing drill stem test, and cement again was pumped through the perforations at 3,610-20 feet. When killed, it was flowing at the rate of 275 bbls. daily with 10 per cent salt water through chokes on top and bottom. Previously it had been flowing from 300 to 375 bbls. of pipe line oil daily.

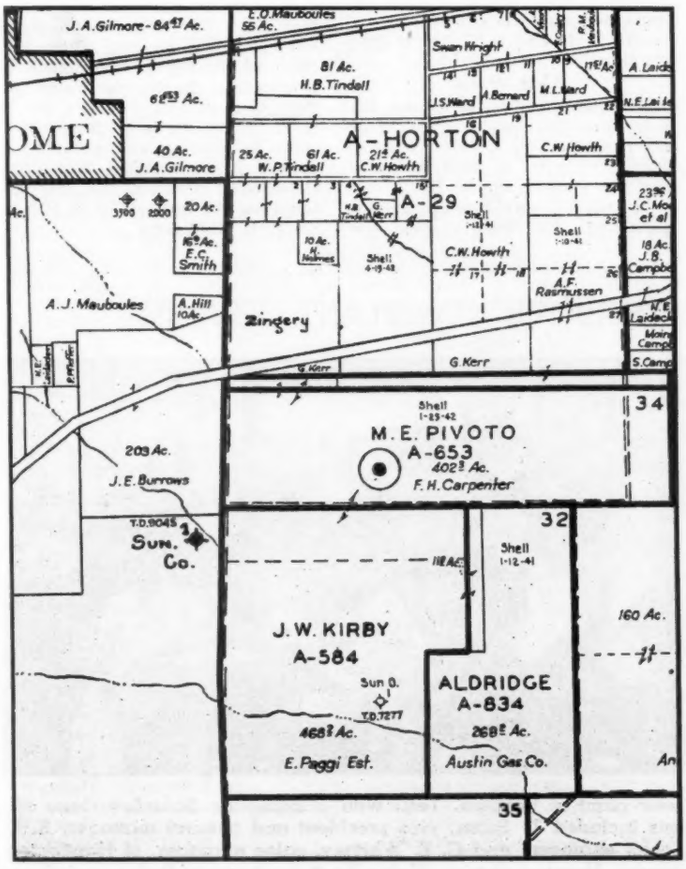
In the meantime the company is moving in and rigging up for two additional tests, one, being No. 2 Hughes, 933 feet northeast of the discovery well, and the other No. 1 Houston Farms, 1¾ miles southeast of the discovery well, located 466 feet out of the north corner of the south half of the Daniel Buckley Survey, Abstract 29.

At Nome, where Shell Petroleum Corp. made a 11-minute drill stem test in its No. 1 Carpenter in sand at 6,005-22 feet, 20 stands of 26 gravity oil were recovered. The hole, however, is being deepened and at latest report was cored to 6,042 feet where another test may be made. The well topped Marginulina at 5,922 feet, in which formation the well is. Several other deep tests have been drilled on the Nome prospect, all of which encountered important showing around this depth.

The fourth new oil field in the making for the Gulf Coast was at Big Lake, Cameron Parish, Louisiana, where Magnolia Petroleum Co. No. 1 Alvin Hebert is in oil sand at 8,606-18 feet. Operators were scheduled to drill plug of the 7-inch casing, cemented at 8,603 feet, Monday. The well is a half mile east of the same company's No. 1 Broussard, completed late last year as a distillate and gas well from sand at 7,960 feet.

Anahuac Field

Humble Oil & Refining Co. No. 17 Middleton, east extension test of the Anahuac field, Chambers County, Texas, was completed in a sand at a total depth of 7,235 feet flowing 18 bbls. hourly through a quarter-inch choke. The same company's No. 8 Tyrell, section 52, west central part of the field, came in for 28.38 bbls. an hour through a quarter-inch choke with pressure of 1,075 pounds on the tubing and 1,050 pounds on the casing. No. 21 Middleton, section 56, on the southwest edge of the field, was abandoned as dry at 7,151 feet. It has a slight show at 7,145-51 feet.



Map of Nome area, western Jefferson County, showing location of Shell Petroleum Corporation No. 1 Carpenter

Jefferson County

Henry J. DeArman No. 1 First National Bank, F. Begner Survey 1-A, in the Rosedale area, about 2½ miles north and east of development of the Amelia field, in Jefferson County, proved a dry hole at 7,021 feet and is being abandoned. Humble Oil & Refining Co. No. 2 Guinn, in the Amelia field, came in flowing 14.73 bbls. hourly through a three-eighths inch choke with bottom of hole at 6,776 feet. Glenn H. McCarthy No. 1 J. B. Langham, in the northeast end of the field, was reported 8 degrees off vertical at a depth below 6,200 feet and was plugged back to approximately 4,750 feet to straighten.

Humble Oil & Refining Co. No. 3-B Bayou Development Co., northeast extension test at Dickinson, Galveston County, was abandoned as dry at 8,370 feet. Stanolind Oil & Gas Co. No. 4 State, in Dickinson Bayou, was plugged back from 8,125 feet to 8,000 feet and 7-inch casing has been cemented at 7,980 feet for a test.

The Gillock pool, south of the Dickinson field proper, was extended southeastward by the completion of Ken Ben Oil Co. No. 1 Stewart, W. K. Wilson Survey. It is 660 feet south of Coast Petroleum Co. No. 1 Stewart. From a total depth of 8,669 feet it was plugged to 8,582 feet, and 7-inch casing perforated with 39 holes at 8,545-59 feet. It is flowing 8 bbls. an hour through a 9/64-inch choke with tubing pressure 950 pounds and casing pressure 1,250 pounds. Location has been made by George Heyer for his No. 1 fee, a 2,000-foot southeastward extension test, also in the W. K. Wilson Survey.

Stanolind Oil & Gas Co. No. 1 Milkovisch, Tract 50, H.&T.B. Survey No. 6, a westward extension of the South Houston field, Harris County, was cleaning itself at latest report, flowing into pits, and no gauge was available. Production is from sand at a total depth of 4,773 feet.

The Texas Co. No. 7-C Pierce, in the Withers pool, about 10 miles south of Picketts Ridge, perforated 7-inch casing at 5,546-50 feet (casing cemented on bottom at 5,565 feet), and flowed 158 bbls. in 17 hours through one-quarter inch choke, having 950 pounds pressure on tubing and 1,175 pounds on casing, but it went dead and is being worked over.

Location has been made by Texas Co. for its second test on its "B" block, on the Pierce ranch, where last week the first test was com-

pleted as a gas well in sand at 5,537 feet.

Wharton County

Sterling Oil & Refining Co. abandoned No. 1 Agnes Genger, on the East Bernard prospect in northern Wharton County, with bottom of hole at 7,871 feet in the Cook Mountain, topped at 7,684 feet.

Another important wildcat on the Texas Coast which failed to make the grade was Magnolia Petroleum Co. No. 1 Funchess, section 16, H.&T.B. Survey, near Cheek. It was abandoned at 9,098 feet. Several gas showings were encountered.

Hawkeye Petroleum Co. No. 1 W. F. Harder, 2 miles northwest of the Livington field, Polk County, was abandoned as dry at 4,182 feet.

At Tomball, Harris County, Humble Oil & Refining Co. No. 1-B Juergens, J. House Survey, came in flowing on potential test 23.12 bbls. per hour through a quarter-inch choke with tubing pressure of 750 pounds, total depth 5,572 feet.

The Placedo field, Victoria County, continues active. Barnsdall Oil Co. and American Liberty Oil Co. No. 4 Pickering-Roos flowed 120 bbls. in 15 hours with tubing pressure 1,500 pounds and casing pressure 1,600 pounds through a quarter-inch choke, total depth 4,749 feet. Harrison & Abercrombie No. 3 Sturdevant flowed 22 bbls. an hour through a one-fourth inch choke with 610 pounds pressure, total depth 4,764 feet. E. L. Smith and Gulf No. 1-B Henderson & Pickering flowed 40 bbls. daily by heads at 4,785 feet. Commonwealth Oil Co. No. 1 Perencia was completed for 7 bbls. an hour through one-fourth inch at 4,776 feet, showing 105 pounds pressure on tubing and casing.

South Louisiana

In addition to the prospect of proving first oil production in the Big Lake area, Cameron Parish, where Magnolia Petroleum Co. No. 1 Alvin Hebert is in oil sand at 8,606-18 feet with casing cemented to test, field developments in coastal Louisiana hold in store several important field extensions.

At Roanoke, Jefferson Davis Parish, Gulf Oil Corp. No. 2-B Anding, northwest of production, found oil sand at 8,723-32 feet and on drill stem test recovered 1,000 feet of oil. It is waiting for cement to set to test.

Continental Oil Co. added two producers at Tepetate, Acadia Parish, in the completion of Nos. 2 Ortego and 4 Homeseekers, the former making 580 bbls. a day through a quarter-inch choke while the latter flowed 111 bbls. in seven hours through a three-sixteenths inch choke. Both are in the regular 8,300-foot pay, the former at 8,316 feet and the latter 8,320 feet.

Herton Oil Co. No. 4 Banta, Jeanerette field, west of production, flowed 30 bbls. an hour through a quarter-inch choke from sand at a total depth of 6,688 feet. No. 3 Banta, in the north end, has been abandoned as a dry hole at 9,005 feet. Location has been made for No. 1 Barraullaux, west of No. 4 Banta. No. 1 Carter, east of production, which drilled to 9,602 feet and then plugged back to sand at 7,060 feet, is waiting on cement to test.

The Texas Co. No. 1 Futral, Port Barre, was abandoned at a total depth of 5,997 feet.

On the southeast side of Jennings, Acadia Parish, Shell Petroleum Corp. No. 1 Connover had sand at 7,524-45 feet and in a drill stem test showed 250 pounds gas pressure with a showing of oil. It is being cored deeper.

Eastern Fields

(Continued from Page 110)

duction from 4 bbls. a day to 20 bbls. a day.

In Roane County, the South Penn Oil Co. is meeting success in reconditioning wells in Reedy district. On the M. C. Newhart production was increased seven times and on the Julia Stewart farm three times and on the C. P. and G. B. Davis farm six times.

Gas Wells

In Boone County, the Owens Illinois Glass Co. completed No. 27 on the Peytonia Coal Land Co. lease in Sherman district at 2,755 feet, as a gas well gauging 281,000 feet a day.

In Cabell County, three wells were completed. The West Virginia Gas Co. well on the F. F. Vance farm in McComas district had Big lime at 1,265-1,427 feet; Big Injun sand at 1,498 feet, with about 3,500,000 feet of gas showing at 1,499-1,503 feet. In this district, W. C. Kingery and others completed the test on the Methodist Church lot as a gas well gauging 1,908,000 feet a day from sand at 1,342-49 feet. The Kentucky West Virginia Gas Co. completed the test on the J. B. Bailey farm at a depth of 3,237 feet as a gas well gauging 240,000 feet a day. It found the gas in the Brown shale at 3,150-65 feet.

In Gilmer County, F. G. Bish completed a well on the Joseph Steinbeck farm on Mudlick Creek in Troy district. It is a gas well good for 176,000 feet a day from the Blue Monday sand at 1,490-1,515 feet with the gas showing at 1,502 feet. On Leading Creek in this district, the C and H Oil Co. completed a gasser on the R. E. Garrett farm in the Big Injun sand 1,520-1,538 feet. It gauges about 75,000 feet a day. The same company made a location on the F. B. Wilfong (mapped as Alfred Bush) farm, on Leading Creek.

In Ritchie County, two tests were dry. Roscoe Moats and R. W. Richards drilled on the Georgetta Ross farm through the Injun sand to 1,628 feet and found no pay. It is in Grant district. Glenn T. McBurney and others drilled on the S. S. Shuman farm in the same district through the Big Injun sand and it was also dry. The depth was 2,075 feet.

In Wayne County, Maebohn and Huffman completed a test on the Henry Mullens farm in Union district at 2,937 feet. It was good for 260,000 feet of gas at 2,667 feet.

New Operations

With the recent completion of two fair gas wells in Upshur County, a small though interesting drilling program has started in two districts. In Buckhannan district, the Union Gas Corp. is down 2,361 feet in a test on the J. W. Gould farm. Taylor Cavender has made a location for a test on the R. F. Freeman farm. The Cumberland Allegheny Co. has material on the ground for a test on the P. L. Kidd farm.

In Mead district, Upshur County, the Cumberland Allegheny is drilling a test on the H. C. Tolbott farm. The L. S. Goff Oil & Gas Co. is spudding in a test on the O. B. Phillips farm. The Standard Gas Co. is drilling at 1,425 feet in a test on the Grace Young farm. The Pittsburgh & West Virginia Gas Co. is down 545 feet in a test on the Rosa L. Strader farm and has made a location for a No. 2. The Cumberland Allegheny Co. is building a rig for a test on the E. F. Crites farm.

Rocky Mountain Runs

Production estimates for week ended June 20, 1936:

WYOMING	
Salt Creek	16,710
Big Muddy	1,530
Badger Basin	40
Byron	30
Dallas Derby	570
Dutton Creek	60
Elk Basin	330
Ferris	20
Frannie	1,800
Garland	120
Grass Creek	1,200
Hamilton dome	1,110
Hidden dome	90
Hudson	280
LaBarge	1,100
Lance Creek	3,830
Lost Soldier	1,530
Midway	60
Oregon Basin	1,750
Osage	800
Pilot Butte	30
Quealy dome	1,720
Rock River	1,720
Poison Spider	160
Teapot	20
Warm Springs	50
Total Wyoming	35,060
MONTANA	
Buckley-Border	220
Cat Creek	750
Cut Bank	9,000
Dry Creek	1,250
Kevin-Sunburst	4,500
Lake Basin	40
Pondera	840
Total Montana	16,600
COLORADO	
Florence	190
Fort Collins and Wellington	340
Iles dome	3,290
Moffat	470
Orchard	70
Rangely	70
Tow Creek	190
Total Colorado	4,620
NEW MEXICO	
Artesia	670
Cooper	8,660
Eunice	18,830
Hobbs	26,390
Hogback	200
Jal	3,070
Lea area	900
Maljamar	1,970
Monument	6,800
Rattlesnake	720
Table Mesa	90
Total New Mexico	68,300
Total Rocky Mountain region	124,580

Lake Charles Geologists

LAKE CHARLES, La., June 22.—Geologists of Lake Charles and vicinity met at a luncheon recently to form a geological society. Plans were made for bi-monthly meetings at which papers will be read and discussed relative to oil development in South Louisiana. The following officers were elected: R. B. Grigsby, Stanolind Oil & Gas Co., president; Dr. C. Ivan Alexander, Magnolia Petroleum Co., vice president; James S. Kirkendall, Amerada Petroleum Corp., secretary, and C. L. Love, Shell Petroleum Corp., treasurer.

Bonneau Peters, of Shreveport, La., chief scout for Standard Oil Co. of Louisiana, is vacationing in Texas and Old Mexico.

M. J. Lasseigne, tax department head for the Arkansas Natural Gas Corp., is in New York City attending to business matters.

BARBECUE CELEBRATES NEW PLANT OPENING

Baker Oil Tools, Inc., opened its new plant at Houston, Tex., with a barbecue Saturday, June 20. Representatives receiving the guests included T. Sutter, vice president and general manager; S. E. Rees, credit manager; C. E. Burt, chief engineer; and C. E. Whitney, sales manager, of Huntington Park, Calif.; and W. A. Davis, manager, Houston district; Walter Routt, in charge of Dallas and Houston sales; H. Bishop, John Grubb, Gordon Key and Ray Kail, district sales representatives. R. C. Baker, president, was unable to attend

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforsheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1936 High	1936 Low	Week ended June 20 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1935	1935 High	1935 Low	1934 High	1934 Low
125½	75	1,800	96	93	96	Amerada Corp.	788,075	N.P.	50cQ	4-30-36	$2.00	80	48½	55⅝	39
35⅛	26⅝	8,600	28⅞	28	28¾	Atlantic Refining	2,664,904	$25	25cQ	6-15-36	1.00	28	20½	35¼	21½
20	14⅛	8,300	16½	15¾	16	Barnsdall Corp.	2,131,090	$5	15cQ†	5-1-36	‡.20	14¾	5⅞	10	5⅞
21⅝	14	57,100	20¾	19½	20	Columbia Gas & Elec.	11,610,036	N.P.	20c	5-15-36	.20	15¾	3⅜	19¼	6⅝
15¼	11½	39,200	12½	11⅞	11⅞	Consolidated Oil Corp.	13,983,287	N.P.	25c	4-7-36	.25	12¼	6½	14¼	7¼
38½	28⅛	14,000	30	28½	30	Continental Oil of Delaware	4,682,671	$5	25c	7-31-36	.62½	35	15⅛	22¾	15¾
34¾	22	900	25⅝	25	25	General Asphalt	387,149	$10	25c	12-17-35	.25	22½	11¾	23½	12
12¼	6⅜	8,400	8¾	8¼	8⅝	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	7	1½	5⅝	2½
23	17¼	5,300	19½	18¾	19½	Mid-Continent Petroleum	1,843,872	$10	40cSA	6-1-36	.40	20½	9½	14¾	9⅛
26¼	16¾	3,300	18¼	17	17½	Mission Corporation	1,399,345	N.P.	....	.....	....	17¾	10⅝	..	..
42⅛	19⅞	8,600	42⅛	38⅛	41¾	National Supply of Delaware	382,591	$25	....	5-15-31	....	20⅞	9	21⅛	10
17½	12½	9,700	13	12⅝	13	Ohio Oil Co.	6,563,377	N.P.	25cSA	6-15-36	.30	14¼	9¼	15⅞	8½
18	11¾	1,000	12⅞	12½	12¾	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.25	14	6¾	9⅜	5½
4¼	1⅜	500	2½	2½	2½	Panhandle P. & R.	198,770	N.P.	....	.....	....	1⅞	½	2½	⅝
49⅜	38⅛	16,200	41⅝	39¾	41	Phillips Petroleum	4,152,836	N.P.	50cQ¶	6-1-36	1.25	40	13¾	20¾	13⅜
16½	11⅞	5,000	14⅜	14	14¼	Plymouth Oil Co.	1,050,000	$5	25c	6-30-36	.25	13	6½	16⅜	7¼
24⅞	16¼	36,000	18⅛	16¾	18	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	17	5⅞	14⅞	6⅛
43⅝	30¾	4,500	32¼	31	31⅝	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	6-15-36	1.00	36⅞	20¾	38⅜	20¾
19¼	14¾	6,200	17¼	16¾	17	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	16½	5½	11½	6
120	110½	900	119½	118¾	119	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	111	63⅛	89	57
6¾	4⅝	800	4⅞	4¾	4¾	Simms Petroleum	461,698	$10	1.00 liq.	1-27-36	11.75 liq.	18¾	4¾	17⅛	7¼
31½	19½	2,200	24¼	22½	24¼	Skelly Oil	1,008,514	$15	....	12-15-30	....	20½	6½	11½	6
17	12½	44,600	13⅛	12¾	12¾	Socony-Vacuum	31,151,075	$15	20cSA	3-16-36	.30	15¾	10⅝	19⅞	12½
47⅝	35⅝	12,400	37½	35⅞	37⅛	Standard Oil of California	13,014,754	N.P.	25cQ†	6-15-36	1.00	41⅛	27¾	42⅞	26½
40⅛	32¾	10,600	34⅛	33⅛	33⅞	Standard Oil (Indiana)	15,215,677	$25	25cQ†	6-15-36	1.00	33⅜	23	32¾	23¼
30	25	200	25	25	25	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	....	32	20	41	26
70	51⅛	28,700	59⅝	57⅜	59¼	Standard Oil of New Jersey	25,856,081	$25	75cSA¶	6-15-36	‖1.25	52⅜	35⅜	50⅛	39¼
91	72	700	78½	77	78½	Sun Oil	1,733,013	N.P.	25cQ	6-15-36	$1 & 7% Stk.	77	60½	74¼	51½
39½	28⅞	22,700	33¾	31⅜	33¼	Texas Corp.	9,340,069	$25	25cQ	7-1-36	1.00	30¼	16½	29⅜	19⅝
15¼	7½	9,900	11½	10⅜	10⅜	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	9¼	3¼	6½	2½
19⅛	14⅜	11,900	15½	15	15½	Tide Water Associated	5,642,342	N.P.	15cQ	6-1-36	....	15⅞	7⅝	14⅜	8
106½	100⅝	700	105⅛	104¼	104½	Tide Water Associated pfd.	626,221	$100	$1.50Q	4-1-36	§6.50	104½	84	87	64½
28½	20⅞	6,700	22⅝	21⅞	22	Union Oil of California	4,386,070	$25	25cQ	5-9-36	1.00	24	14⅜	20½	11½
31⅝	22⅝	1,300	24¾	24	24¾	Union Tank Car Co.	1,200,000	N.P.	30cQ	6-1-36	1.20	26½	20⅞	25¾	15⅝
5¼	2¾	500	4	3⅞	3⅞	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	3⅛	1	5¾	2

*Ex-dividend. †Plus extras. ‡Also 50 per cent in stock of Barnsdall Ref. §Partly on account of accumulation. ‖Dividend 4/75 Mission Corp. paid 3-15-35. ¶Includes extras.

New York Curb

1936 High	1936 Low	Week ended June 20 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1935	1935 High	1935 Low	1934 High	1934 Low
20¼	13¼	2,800	15½	14⅝	15	Bridgeport Machine Co.	150,000	N.P.	....	5-1-30	....	14⅛	3¾	3¾	½
50	39¾	No sales	..	..	..	Buckeye Pipe Line Co.	200,000	$50	75cQ	6-15-36	$3.00	42½	30½	38	26
4⅞	2½	3,400	3⅛	2⅞	3	Carib Syndicate	799,020	25c	....	.....	....	4¼	1⅝	5½	1½
124¾	105	100	115	114	114	Chesebrough Mfg. Co.	120,000	$25	$1.50Q	6-29-36	6.50	157	115	150	116
7⅞	3	65,500	4⅞	4⅜	4⅞	Cities Service	37,804,394	N.P.	....	6-1-32	....	3¼	¾	4¼	1¼
4	1⅛	9,900	2¼	1⅞	1⅞	Colon Oil	2,200,000	N.P.	....	.....	....	2⅛	½	3¼	½
4⅛	1½	5,700	2⅛	1⅝	1⅞	Cosden Oil	399,687	$1	....	.....	....	1½	¼	3⅞	½
34¾	19⅞	6,400	26¼	24⅛	25¾	Creole Petroleum	6,974,356	$5	20c	12-31-35	.20	23¾	10	14⅜	9⅝
12	9	No sales	..	..	..	Darby Petroleum	509,696	$5	25cSA	1-15-36	.50	8⅞	4	7½	4⅛
4⅜	1⅞	300	3⅛	2⅞	3⅛	Derby Oil & Refining	263,162	N.P.	....	.....	....	2	¾	2¼	1
44	39	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-1-36	4.00	38	33¼	37	30
98	72	5,700	82	75¼	80⅞	Gulf Oil Corp.	4,538,101	$25	25c	7-1-36	....	74¾	50¼	76¾	49¾
76½	57	4,600	60	58⅛	59⅞	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	7-1-36	1.25	64	44	49½	33¼
24½	20	6,500	21	20¾	21	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	6-1-36	1.25	22½	15⅜	17⅞	12⅝
9¼	5½	100	7¼	7¼	7¼	Indiana Pipe Line	300,000	$10	20cSA	5-15-36	.35	6⅛	3⅝	6⅞	3⅝
39⅝	33½	3,900	36¾	36¼	36⅝	International Petroleum	14,247,088	N.P.	$1.25†‡	6-1-36	2.50	39¾	28	33⅜	19⅝
15⅜	9⅞	9,700	12⅜	11¾	12⅜	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	3-16-36	.10	11⅜	4⅜	5	2¼
15	7⅜	500	11⅜	10¾	11⅜	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	8⅛	3½	6	3⅜
14¼	9⅞	2,000	11¼	10⅝	11	Lone Star Gas	5,382,723	N.P.	20cSA	8-15-36	.30	10⅞	4½	8⅜	4¼
8⅜	5	2,000	5⅞	5⅝	5⅝	Mountain Producers	1,682,182	$10	30cSA	7-1-36	.90	5¾	4⅛	5½	4
23	17⅝	2,600	19	18⅜	19	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-36	1.25	20	11¾	18⅛	13⅛
15¾	9¼	600	10¼	10	10¼	National Transit	509,000	$12.50	40cSA	6-15-36	.75	10⅝	6¾	9½	7
4½	2⅞	1,000	3¼	3	3⅛	New Bradford Oil	1,445,202	$5	10cSA	5-15-36	.20	3¼	2	2½	1⅜
6⅝	1⅝	700	3⅛	3	3	New Mexico and Arizona	1,000,000	$1	....	.....	....	2½	1	2¾	1
6¼	4½	1,100	5	4⅞	5	New York Transit	100,000	$5	15cSA	4-15-36	.30	4⅞	3	4¾	3
9¼	6¼	400	5	4⅞	5	Northern Pipe Line	120,000	$10	15cSA	7-1-36	.50	8	5¼	7	4⅝
6⅝	3¼	29,000	5⅞	5⅜	5⅞	Pantepec Oil	1,608,700	N.P.	....	.....	....	4⅜	1¼	2⅝	⅞
19¼	4½	9,200	15¼	14	15¼	Root Petroleum Co.	336,045	$1	....	.....	....	5	1½	..	..
4⅜	1⅞	200	3⅜	3¼	3⅜	Ryan Consolidated	296,931	N.P.	....	.....	....	2½	⅝	3⅜	⅞
10	7	600	7½	7½	7½	Salt Creek Producers	1,496,859	$10	40cSA	6-30-36	1.20	7½	5½	7⅞	5½
40½	32½	700	38	37¾	37¾	South Penn Oil	1,200,000	$25	50c†	3-31-36	1.35	34½	21⅝	26½	17½
7⅞	3¼	300	4	3⅞	4	Southern Pipe Line	100,000	$10	15cSA	3-2-36	.30	5	3⅞	5½	3½
60	54	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$10 spl.	7-1-36	5.00	56	44¼	47	41
23¾	17⅛	3,500	18⅛	17½	17¾	Standard Oil of Kentucky	2,604,790	$10	25cQ	6-15-36	1.25	24	18	18⅜	14⅝
14⅝	11½	No sales	..	..	..	Standard Oil of Nebraska	188,403	$25	....	6-20-34	....	12	7⅜	16⅞	8¼
36¼	21¾	2,000	28⅞	24⅞	28⅞	Standard Oil of Ohio	753,740	$25	25c	7-15-36	....	23⅝	11½	28½	12¼
5	2⅝	15,200	4½	4	4⅛	Sunray Oil	1,610,810	$1	....	4-15-31	....	2⅞	⅞	2	1/16
9⅜	6	1,500	6¼	6¼	6⅛	Texon Oil & Land	336,028	N.P.	15cQ	6-30-36	.60	6⅞	5	11	4⅜
7½	4⅜	1,800	5	4⅜	4⅜	Texas Gulf Producing Co.	888,076	N.P.	....	12-29-34	....	4⅜	2½	7	3⅜

*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note.—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

PERSONAL

WILLIAM N. DAVIS, of Bartlesville, Okla., vice president of the Phillips Petroleum Company, and who has had honors heaped upon him by the oil industry for years, has been named by Secretary Roper, of the U. S. department of commerce, as a member of Roper's business advisory council, which has a membership of 52 prominent industrialists and others. Mr. Davis was one of the pioneer conservationists in the oil business and had much to do with the establishment of the unit operation plan of producing oil pools.

HILDING TORNEBOHM, Gotenberg, Sweden, chief engineer of the technical bureau of Sweden, and chairman of the International Standards Association Committee, delivered the Calvin W. Rice Memorial lecture at the semiannual meeting of the American Society of Mechanical Engineers at Dallas, Tex., on June 17.

J. C. DALLAS, president of Roxana Petroleums, Ltd., of Calgary, Alberta, is spending a few weeks in Vancouver, British Columbia, and other Pacific Coast points.

HARRY MORRIS, of Vancouver, British Columbia, recently visited Calgary and Edmonton, Alberta, and inspected operations in the Wainwright field, east central Alberta.

THOMAS MIDGLEY, of the Ethyl Gasoline Corporation, received the honorary degree of doctor of science from Wooster College, Ohio, at its commencement exercises on June 15.

J. W. STINSON, treasurer of Marathon Oil Company Employes Club, is vacationing in Texas, attending the Centennial at Dallas and visiting other points in the Lone Star state.

JAMES I. HILL, managing director of the Canada-Empire Crude Oil Syndicate of Calgary, Alberta, with DR. J. O. G. SANDERSON, geologist, and D. McALLISTER, drilling superintendent, recently visited the Pouce Coupe district in northern Alberta.

ART NIXON, vice president and sales manager for the Happy Belting Company, has been transferred to Tulsa from Fort Worth, Tex.

HOWARD A. COFFIN, president of the White Star Refining Company, Detroit, Mich., has been reelected president of the Metropolitan Detroit Young Men's Christian Association.

G. S. RICE, of the Edgar Tobin Aerial Surveys, San Antonio, Tex., addressed the Dallas Geological Society in Dallas, Tex., on June 16. He read a paper on "Air Mapping Found Valuable in Surface Work."

J. W. CLARK McKEE, of Mount Pleasant, Mich., formerly executive of the Roosevelt refinery, but recently engaged in independent operations in central Michigan fields, was married recently to MISS KATHRYN HALL in Chicago.

JULIAN GARRETT, general manager of Northwestern Utilities, Ltd., of Edmonton, Alberta, will address the Canadian Gas Association convention at Vancouver, British Columbia, in July on the effect of temperature on gas in transit.

E. B. OBERING, district geologist for Shell Petroleum Corporation in West Texas, delivered a paper entitled "A Review of Salt Deposition in the Permian Basin," before the West Texas Geological Society at Midland on Saturday, June 20.

A. L. STEWART, Hinderliter Tool Company, Tulsa, has just returned from a trip to Rodessa, Louisiana, field.

J. S. LEGGETT, sales representative of the Oil Well Supply Company, has been named district manager for eastern Ohio, eastern Kentucky and West Virginia.

J. S. DANIELS, geologist, has accepted a position with Slick, Pryor & Lockhart in Wichita, Kans., after resigning his position with Continental Oil Company in Ponca City, Okla.

MARTIN G. EGAN, recently from Columbia University, New York City, has taken a position in the geological department of the Shell Petroleum Corporation at Midland, Tex.

E. F. HALLOCK, chief engineer of the Socony-Vacuum Oil Company, was in Los Angeles, Calif., recently on a business visit. Accompanying Mr. Hallock, who is on a nation-wide business trip, is F. E. WHITESELL, motor oil sales chief of the company.

DAN MORAN, president of the Continental Oil Company, has acquired the ranch home of O. R. SEAGRAVES at Hunt, Kerr County, Texas. The purchase includes the large home with 322.95 acres and an option on 3,000 additional acres.

WILLIAM F. SULLIVAN has resigned his position as purchasing agent with Mountain Iron Supply Company to retire to his farm in Texas. Mr. Sullivan has been employed by Mountain Iron Supply Company for nine years and was formerly employed by Jarecki Manufacturing Company. Mr. Sullivan's place has been taken by HOMER HENDERSON, formerly with the National Supply Company.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The question of an adequate supply of oil is all that is bothering adherents of an American navy fueled with oil. Estimates on future supplies of oil range from 10,000,000,000 to 24,000,000,000 bbls. and of this only 650,000,000 to 2,000,000,000 bbls. is credited to the Mid-Continent and Gulf Coast fields.

W. H. McFadden and E. W. Marland of Pittsburgh, Pa., have been drilling around Ponca City, Okla., for two years, completing two gas wells and five dry holes. They have just got their first oil well, which looks good for 30 bbls. daily.

Oklahoma and Kansas crude is posted at 48 cents per barrel. Pennsylvania grade brings $1.30; Gulf Coast 67 to 72 cents, and California 30 cents.

20 YEARS AGO

The Healdton field in Oklahoma is being prorated as to pipe line runs from wells. The field is producing 60,000 bbls. per day. Some operators are shutting in wells, and others are building their own storage tanks.

Tulsa oil men are arranging to give a complimentary banquet to H. F. Sinclair and J. S. Cosden in recognition of their outstanding services as oil industrialists.

Repressuring with air is giving good results in the southeastern Ohio fields.

10 YEARS AGO

The Saginaw field is attracting oil men's attention to Michigan with the thought that oil exists in other parts of the state. Wildcatters are looking about for promising places to drill.

Harry Scott Grayson dies in Washington, Pa., and Edward J. Bostaph dies in St. Petersburg, Pa. Both were widely known oil producers.

Forest Oil Co. of Bradford, Pa., buys the J. T. Jones properties in the Bradford field. Twenty-five hundred acres of leases were included and the price is said to have run into the millions.

W. H. VAUGHN, superintendent of the Pelican Oil & Gasoline Company, Shreveport and Rodessa, La., is vacationing on the Gulf of Mexico.

GUILFORD SHAW TURNER, vice president in charge of sales for Old Dutch Refining Company, Muskegon, Mich., has resigned. Mr. Turner's successor has not been selected.

FRANK DRANE, president of the Drane Tank Company, Fort Worth, Tex., accompanied by MRS. DRANE, has been making a business, as well as pleasure, trip through California, Oregon and Washington.

MISS FLORENCE LUNDELL, librarian, technical department, Tulsa Public Library, is in Baltimore, Md., on a two weeks' visit with her sister and plans to be back in Tulsa about July 5.

PAUL L. BROOKS, sales manager, Parkersburg Rig & Reel Company, Parkersburg, W. Va., was in Kansas last week on a trip through Mid-Continent area and will be in Oklahoma this week.

HOWARD B. COONE, formerly of Grand Rapids, Mich., has been named resident manager in charge of the Muskegon, Mich., marine distribution terminal of White Star division, Socony-Vacuum Oil Company. He succeeds H. F. WILCOX, who was transferred to Detroit headquarters.

R. VANDERWOUDE, New York, vice president of the Shell Union, accompanied by DR. R. R. MORSE, Houston, Tex., chief geologist of the Texas Gulf Coast division of the Shell Petroleum Corporation, and R. D. RISSER, division manager, Louisiana Gulf Coast, made an inspection trip of company properties in southern Louisiana.

PARAGRAPHS

CAMPBELL M. HUNTER, O.B.E., who arrived recently in Calgary, Alberta, from London, England, has left for Wyoming, from where he will leave shortly for England.

A. C. FRITCHIE, of the Baroid Sales Company, was the speaker at the meeting of the Kansas Geological Society in Wichita last Wednesday. He discussed "The Properties of Drilling Mud."

K. van ZONNEVELD, London, England, representative of Warren Petroleum Company of Tulsa, is visiting the oil centers of the United States. He is a director of Harris & Dixon, Ltd., of London. At present Mr. van Zonneveld is in California.

FRED W. SAGE, vice president in charge of production of the A. J. Smith Engineering Company, with his family, left Edmonton, Alberta, recently for McMurray, where he will have charge of engineering operations for Abasand Oils, Ltd. Mr. Sage motored to Edmonton from Fort Collins, Colo., where he superintended construction of a power project.

JAMES P. FLANAGAN, Tulsa oil producer, was a guest of honor at a banquet given by St. Bernard's Alumni Association at Bradford, Pa., recently. Mr. Flanagan graduated from St. Bernard's high school and shortly afterwards went into the oil field supply business and from that to successful drilling operations in the Oklahoma and Kansas fields.

L. B. TINGLEY, in the tax department of the Phillips Petroleum Company, has been transferred from Bartlesville, Okla., to Amarillo, Tex.

C. M. RAMSEY, of Marathon Oil Company, cashier department, Tulsa, returned to work last week after convalescing for four weeks from a major operation.

KNOX BATTEN, of the Phillips Petroleum Company's legal department in Texas, will head the company's new legal department in Louisiana with Shreveport as headquarters.

GEORGE W. HOLLAND, director of Federal Petroleum Conservation Division, Washington, D. C., visited the Federal Petroleum Tender Board at Kilgore, Tex., during the past week.

ROY B. JONES, president of the Panhandle Refining Company, was the guest of honor at a banquet in Wichita Falls, Tex., on Saturday, June 20. Among those in attendance were representatives of firms that have been in business in Wichita Falls for a period of 20 years, the number of which was found to be 132.

EDMUND JUSSEN, who on June 1, 1936, was appointed manager of field operations of the Union Oil Company succeeding A. C. RUBEL, who was appointed director of production, is a graduate of the University of California, matriculating as a mining engineer in 1921. Immediately after graduation, he entered the employ of the Pacific Oil Company as a field engineer and joined the Union Oil Company's geological department as a scout in October, 1924. Mr. Jussen was appointed a geologist in 1925 and became chief petroleum engineer in the field department in August, 1929. Mr. Jussen has been succeeded in the latter position by W. S. EGGLESTON and E. D. HARDISON has been appointed development engineer.

L. A. BECHERL, production engineer for the Atlantic Oil Producing Company, Dallas, Tex., has resigned to go into business for himself.

I. F. BINGHAM, professor, school of petroleum engineering, University of Oklahoma, was a visitor in Shreveport, La., last week.

L. S. COLLINS, comptroller of the Carter Oil Company, who was operated on for appendicitis May 22, returned to his work June 17.

A. R. CARMODY, vice president, North Central Texas Oil Company, has been on a business trip to St. Louis, Mo., for the past week.

A. H. RINEY, chief engineer for the Phillips Petroleum Company, with offices in Bartlesville, Okla., is spending several days in Washington, D. C.

JOHN S. CHICK, formerly civil engineer in the northern division for Carter Oil Company, now is production foreman for that company at Mount Pleasant, Mich.

R. H. HARGROVE, vice president of the United Gas Public Service Company of Houston, Tex., and W. M. RICE, secretary of the same company, were business visitors in the United's Shreveport, La., office this week.

O. E. McCLATCHEY, Barnsdall Oil Company, Tulsa, was reelected chairman of the Oil Company Buyers group of the National Association of Purchasing Agents, at the annual convention in New Orleans, La., recently. F. D. BRYANT, Standard Oil Company of California, was named vice chairman for California, and O. D. STOREY, Shell Petroleum Corporation, Houston, Tex., is the new vice chairman for Texas. H. M. COSGROVE, secretary of the Tulsa association, is secretary for the group, and also was reelected chairman of the editors group.

He Can Tell Them How

If any man under E. D. Smith, Oklahoma division superintendent of the Magnolia Petroleum Company's producing department, should want to know how to do any part of his work, there's at least one man who can tell him. That's Mr. Smith. He has filled most of the jobs himself. After he had finished the grade school at 15 his further education was obtained without benefit of classroom. At 18 he started as a roustabout for the South Penn Oil Company near his native town, Meadville, W. Va. Next he got a job as pumper for the American Oil and Development Company. Then for several years he served as foreman for oil companies in Illinois, Ohio and Kentucky fields. In 1911 Mr. Smith returned to the South Penn at Charleston, W. Va., with both field and office duties. Mr. Smith left the South Penn to become superintendent for the Roxana Petroleum Corporation (now Shell Oil Company) at Healdton, Okla. He was transferred to Cushing, Okla., in the same capacity. After six months with Roxana he became field foreman for the Magnolia at Augusta, Kans. A year later he was moved to Drumright, Okla., as district superintendent. He held this post 15 years till on January 1, 1935, he was advanced to his present position with offices in Oklahoma City. Mr. Smith married Miss Mabel Enoch. He likes hunting, fishing and golf.

E. D. SMITH

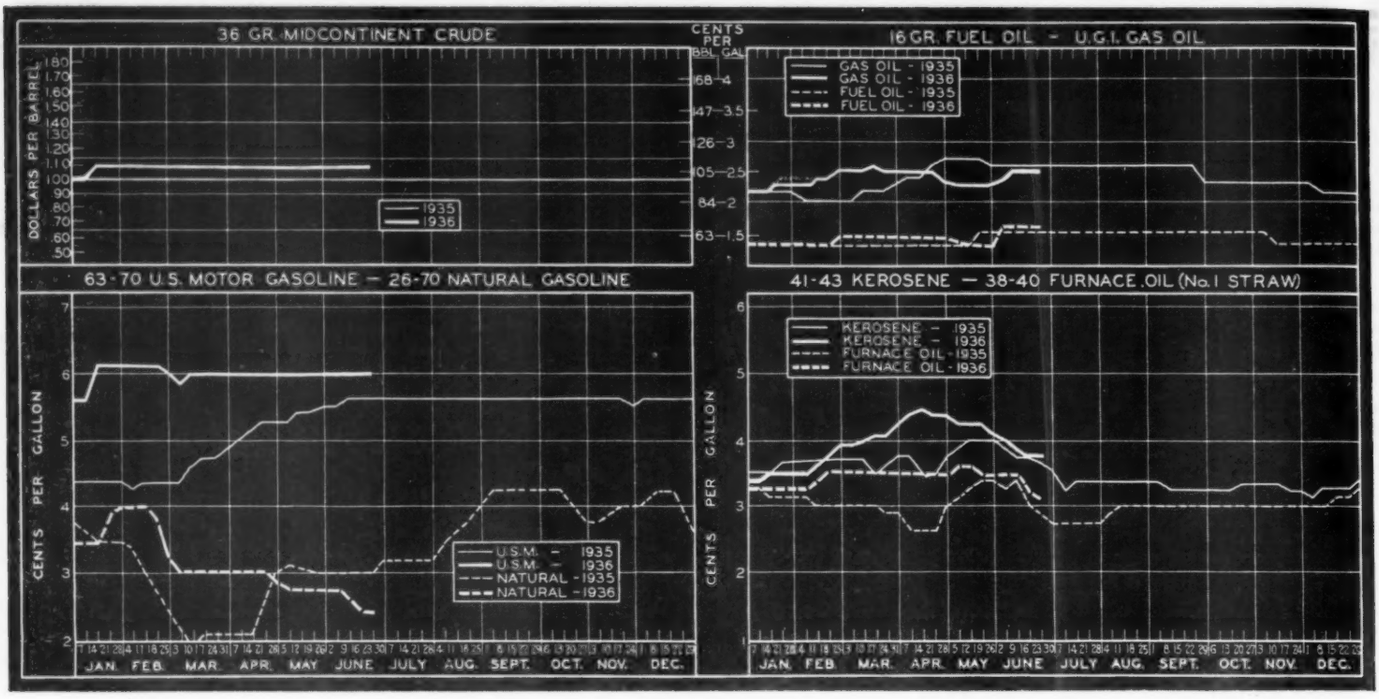
JOSEPH E. PURZER, geologist for the Phillips Petroleum Company, has been transferred from Midland, Tex., to Shreveport, La., by the company.

RICHARD (DICK) SNEDDEN, of Los Angeles, Calif., a member of the Union Oil Company's advertising department, has left on a vacation trip which will include Washington, Oregon and British Columbia.

RICHARD H. PENCE has rejoined the staff of J. R. PEMBERTON, California oil umpire, and will act as engineer in several Los Angeles Basin fields and assist WILLIAM WARDNER in the summarization and computations necessary for the determination of field and pool quotas each month.

WALTER R. ISENHART, Blackwell, Okla., was recently presented with a gold service pin by the Standard Oil Company of Indiana as recognition of his 30 years service with that company. He went to work for the Standard on June 15, 1906, and for the last 20 years has been sales representative for five northern Oklahoma counties, with offices at Blackwell.

LEAVITT CORNING, JR., geologist with the Plymouth Oil Company of San Antonio, Tex., will resign that position July 1 to establish practice as consulting geologist. He will occupy offices in the Milam Building, San Antonio. Graduated from Princeton in 1928, he continued four more years of study at Pittsburgh while in the employ of the Gulf Production Company. He joined the Plymouth Oil Company in 1932 and was closely associated with the geology leading to the discovery of the rich Plymouth field in San Patricio County, South Texas.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Group 3 Motor Fuel Market Assumes Livelier Mien as Demand Climbs

By T. F. SMILEY

A bounding week-end demand for gasoline which kept service-station attendants on the jump and which started a shower of jobber instructions has imparted a livelier tone to the motor-fuel market in the Group 3 area, although thus far this better feeling has not expressed itself in higher quotations.

Nobody minimizes the threat to market stability which lies in the current overproduction of crude, and misgivings still are heard concerning the huge stocks of gasoline piled up earlier in the year; but there is a growing belief that the smashing character of the consumption now developing may absorb excess inventories and leave the trade in a healthy condition at the close of the vacation season, which reaches its climax late in August.

Higher Prices a Possibility

Informed market observers express the opinion the gasoline market is on so firm a basis now that only a small push would be required to lift it to higher price levels. As a matter of fact some refiners who found themselves in a sold-out condition last week began asking an eighth more for their third-grade material; but the spot demand did not acquire a degree of urgency which enabled them to make any sales at the higher figure, and as their stocks began to rise again they accepted the going price. It is pointed out that as the summer demand continues to increase, a larger number of refiners will find themselves with depleted stocks at one time, prompting all of them to raise their prices simultaneously and that such a situation almost inevitably would result in a general stepping up of quotations.

Reports from various areas indicate that the demand for motor fuel in the last week was 10 to 50 per cent higher than it was in the corresponding period last year. On top of such a climb refiners and marketers have before them the double holiday brought about by the fact that Independence Day falls on Saturday. Jobbers and retailers are making preparations for the rush to the family car which always marks Independence Day and which this year will be more enthusiastic than usual because of two days being offered for pleasure driving. Demand for gasoline is expected to rise to new heights.

Most of the motor fuel movement continues to be on contract, though some increase in spot business is reported. The situation in East Texas contains no market threat; and for the time being Rodessa, which caused nervousness a few weeks ago, is playing a minor role.

Although stabilized grades of natural gasoline were in active demand, with something resembling scarcity reported in a few instances, the 26-70 was still waiting dejectedly for a kind look. Prices were unchanged. So far as the 26-70 was concerned, manufacturers declared price had little or nothing to do with the case. Refiners simply could not take any more. Unless somebody should find himself with a tank-bursting distress inventory on his hands, prompting him to dump it for whatever handful of small coins might be tossed to him, the present quotations for natural gasoline are not expected to be lowered. August will see the beginning of the demand for fall blending, and feeling in the trade is that in the intervening time there will be no collapse of the price structure, especially in view of the favorable position of the stabilized grades.

Kerosene and Tractor Fuels Dull

Kerosene was easier and so were the tractor distillates. These products are now in that inactive zone which begins with the end of the spring plowing and ends with the opening of the fall threshing. The lull will be a short one this year, for wheat fields in the Northwest will soon be ready for the threshers. Fall plowing will extend the demand for tractor fuel after the threshing is over.

Industrial gas oil was firm, not because of heavy demand on the part of purchasers, but because refiners who have cracking equipment are using it themselves. Little of the material was reported available outside the Oklahoma City field. The lubricant group was doing well, with no price changes reported. There was no spot demand for wax and quotations were nominal.

Refined Oil Market Barometer

A more cheerful feeling pervades the market as gasoline consumption climbs to new records. Less concern is expressed regarding immense motor fuel stocks and excessive production of crude. Higher retail gasoline prices are a distinct prospect in California and increases in both tank-car and pump prices east of the Rockies are more than a remote possibility.

MID-CONTINENT. Gasoline a little brighter. Kerosene and tractor fuels dull.

EAST COAST. Increased optimism follows steady reduction of gasoline price wars.

GULF COAST. General market steady.

PENNSYLVANIA. Kerosene and fuel oil soft.

CALIFORNIA. Gasoline firm. Naturals tight.

CHICAGO. Gasoline consumption rising. Heating oils dull. Fuels and gas oil strong.

East Coast Refined Market Is Feeling Better as Retail Price Wars Wane

NEW YORK, June 22.—Termination of the retail gasoline price war in New York's metropolitan area and progress toward elimination of disturbed spots in New England and New Jersey gave marketers in Atlantic seaboard territory further cause for optimism last week.

Despite progress made elsewhere, the disturbed conditions in Rhode Island and in scattered parts of other New England states continue to aggrevate marketers. Socony-Vacuum cut Boston and nearby cities a cent June 19. However, there is intangible evidence that corrective steps will be taken in the near future. Rain and threatening weather existing along the upper Atlantic seaboard for the past two weeks has retarded the burst of early summer motor fuel demand enjoyed in other portions of the country. Cuts of a quarter to a half cent per gallon on No. 2 and No. 4 furnace oils were made June 18 by Standard Oil Co. of New Jersey at Baltimore, Md., and Norfolk, Va., on spot orders, but heating material quotations generally were undisturbed.

A limited volume of furnace oil, confined to two or three cargoes, has been offered in the eastern territory during the past few days at prices a shade below the quoted market, but the pressure has not reached sufficient proportions to be considered indicative of either the supply or price trend. The material was reported moved into hands of jobbers in position to hold it for future delivery. Heavy fuels continue tight with 85 cents the firm quotation on Bunker C at the Gulf.

Conditions which forced the fractional reductions at Baltimore, Md., and Norfolk, Va., were declared to be local in nature. Grade C bunker fuel oil is holding steady at $1.05 per barrel and diesel fuel is in moderate demand at $1.65 per barrel at refinery terminals.

At virtually all stations in metropolitan New York, the house brand gasoline quotation is 19.2 cents per gallon, including taxes totaling 5 cents. Prior to the general adjustment of prices on June 15-16, many stations were offering a third grade gasoline six and seven gallons for 98 cents. The price situation on this grade has also improved.

A slightly easier tone was apparent in the kerosene market with 41-43 material offered in fair sized quantities at 4⅝ cents per gallon. Pressure on the kerosene market is coming chiefly from Gulf Coast shipping points, but in some instances is originating at inland Texas plants where gasoline demand is outstripping consumptive requirements of other products. The entire list of export products with the single exception of kerosene is holding firm although business on wax is virtually at a standstill. Gulf Coast gasoline for export business is holding its fractional gains made over the past few weeks and a limited volume of material is available. Pennsylvania grade cylinder stocks, bright stocks and neutrals range from 22 to 28.50 cents per gallon with firmness characterizing the market.

Competition for future furnace oil business remains keen with the tank-wagon contract commitments reported far in advance of a comparable period a year ago. Companies soliciting contracts for next winter delivery are guaranteeing the consumer a maximum of 7¼ cents per gallon and ranging down to the present spot market of 6½ cents on No. 2 material delivered in the New York metropolitan area. Contracts with consumers now being solicited and assumed by dealers call for delivery through next fall and winter and extending to May 31, 1937.

A majority of refiners declare that production of fuel oil will not be spurred next winter to the extent that accumulation of top-heavy gasoline stocks will be necessary. However, contract business alone in the eastern territory will probably press the gasoline sales departments to keep abreast. While there are virtually no deliveries being made now to homeowner consumers, the contract business booked gives indication of another heavy call on fuels next winter. This condition, however, will be regulated to a considerable extent by severity of the winter season along the Atlantic seaboard.

Concessions to fleet operators extended to attract gallonage business are disturbing to some marketers, although the pressure to move bulk station stocks has been somewhat diminished by relative brisk vehicle consumption for three weeks prior to rain and threatening weather. Precipitation along a good portion of the northern Atlantic Coast during the past two weeks has delayed vacationists and retarded the week-end motoring to an appreciable extent.

Considerable study is being devoted by eastern refining companies and their sales organizations to the future of marketing with a majority expressing confidence that the trend toward private ownership of service stations will not have a disrupting effect on conditions. Marketers intend to maintain indirect control over their station outlets through the potential threat that undesirable contracts will not be renewed at frequent intervals.

Under the existing conditions, it is probable that marketers will dispose of their stations under rather rigid, short-term contracts. Some fear has been expressed that the leasing of station equipment practice will return to a place in the marketing picture. Those marketers viewing with alarm the leasing of pumps and other service station equipment foresee an outright loss or at least a burdensome expense item, particularly in cases of accounts doing a large gallonage business. Concern is expressed in some quarters that dealers who have built up a strong gallonage position may not acquiese willingly to a cut out of their margin for equipment leasing expense, In such cases, sponsors of the profitable dealers will be reluctant to resort to extreme measures even though lease payments are in duress.

Despite the few disturbed retail marketing areas and one or two other unsatisfactory conditions prevailing at the moment in Eastern territory, there is distinct optimism for general conditions throughout the summer season. Marketers are preparing to run record volumes of motor fuel through their pumps and the demand for premium grades of lubricants is stimulating all quarters.

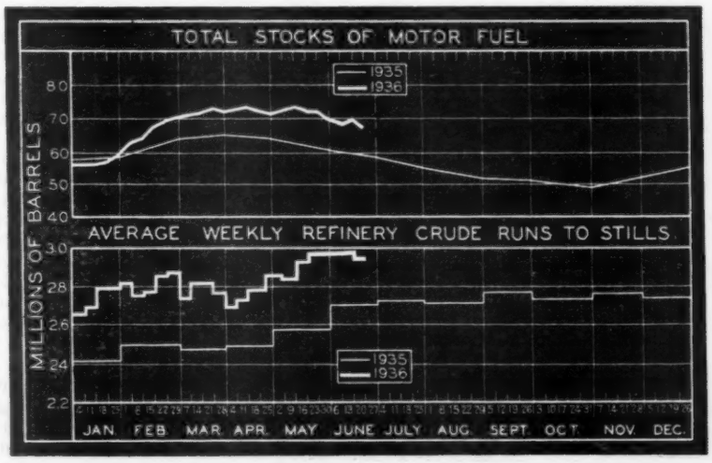
Some complaint is heard that reclaimed oil is being dispensed in appreciable quantities particularly in the New York metropolitan area, but this practice is reported decreasing and steps are being taken by various organizations, including automobile associations, to bring about its complete elimination or at least to force its handlers to brand the product as such as protection to oil companies and the consumer. Marketers admit that in a few instances contract dealers have been detected dispensing reclaimed oil through company branded bulk containers.

A. P. I. Weekly Refinery Statistics

Week Ending June 20, 1936

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	509,000	19,135,000	9,631,000
Appalachian	94.8	106,000	2,613,000	473,000
Indiana, Illinois, Kentucky	96.1	430,000	9,885,000	4,074,000
Oklahoma, Kansas, Missouri	84.8	293,000	6,991,000	3,309,000
Inland Texas	48.5	111,000	1,468,000	1,781,000
Texas Gulf	96.8	576,000	8,007,000	7,416,000
Louisiana Gulf	96.4	129,000	1,427,000	2,144,000
North Louisiana and Arkansas	90.0	36,000	400,000	413,000
Rocky Mountains	61.9	48,000	1,442,000	765,000
California	92.6	519,000	13,114,000	71,781,000
Total reported	89.7	2,757,000	64,482,000	101,787,000
Estimated unreported	.....	193,000	4,732,000	2,941,000
*Estimated total	.....	2,950,000	69,214,000	104,728,000
*Estimated total previous week	.....	2,975,000	70,668,000	103,999,000
†June 30, 1935	.....	2,724,000	59,507,000	103,674,000

*Bureau of Mines basis currently estimated. †Monthly report, U. S. Bureau of Mines.



World Power Delegates

President Axtell J. Byles, of the American Petroleum Institute, has announced appointment of J. Edgar Pew, of Philadelphia, and Edwin S. Hall, of New York, as Institute delegates to the Third World Power Conference at Washington, D. C., September 7 to 12. Myron S. Watkins, of New York University, will speak on the organization of petroleum industries. President E. L. deGolyer, of Felmont Corp., Houston, Tex., will speak on petroleum production.

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of June 23, 1936

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 3 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Chicago	15.5	17.5	4.0	10.1
Decatur, Ill.	16.0	18.0	4.0	10.1
E. St. Louis	15.7	17.7	4.0	9.8
Joliet	14.5	17.5	4.0	10.1
Peoria	16.0	18.0	4.0	10.1
Quincy	15.8	17.8	4.0	9.9
Davenport, Ia.	16.0	(†)	4.0	10.1
Des Moines	15.8	(†)	4.0	9.9
Mason City	16.2	(†)	4.0	10.3
Sioux City	16.0	(†)	4.0	10.1
Duluth, Minn.	16.8	18.8	4.0	10.9
Mankato	16.4	18.4	4.0	10.5
Minneapolis	16.4	18.4	4.0	10.5
LaCrosse, Wis.	17.4	19.4	5.0	10.5
Green Bay	17.7	19.7	5.0	10.8
Milwaukee	16.3	18.3	5.0	10.4
Madison	17.4	19.4	5.0	10.5
Detroit, Mich.	14.5	16.5	4.0	8.8
Grand Rapids	15.4	17.4	4.0	9.3
Saginaw	15.6	17.6	4.0	10.1
Evansville, Ind.	17.7	19.7	5.0	10.6
Indianapolis	17.9	19.9	5.0	10.8
South Bend	18.1	20.1	5.0	11.0
Fargo, N. Dak.	17.4	19.4	4.0	11.5
Huron, S. Dak.	17.9	19.9	5.0	11.0
Sioux Falls	17.4	19.4	5.0	10.5
Kans. City, Mo.*	15.4	17.4	4.0	8.0
Springfield	15.1	17.1	4.0	9.2
St. Louis	15.7	17.7	4.0	9.8
St. Joseph*	15.4	17.4	4.0	9.5
Wichita, Kans.	14.9	16.9	4.0	7.1
Bartlesville, Ok.	15.0	19.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

†Standard Oil Co. (Indiana) has leased all service stations in Iowa.

Discounts to dealers except in Iowa: 3½ cents on premium and regular and 2½ cents on third grade off service station prices; discounts to dealers in metropolitan Chicago one-half cent larger than rest of Standard of Indiana territory, namely 4 cents and 3 cents on respective grades. Dealers in Iowa sold at posted "Dealer Prices."

Stanolex Fuel Oil in Chicago

Effective June 1, 1936, f.o.b. Chicago tank-wagon prices: Range oil, less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons and more, 7.25 cents. No. 1, less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents. Stanolex furnace oil, less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents. Stanolex fuel "A," less than 400 gallons, 5.75 cents; 400 gallons or more, 4.75 cents.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Atlanta, Ga.	20.5	22.5	7.0	*13.5
Augusta	20.0	22.0	7.0	*13.0
Macon	20.0	22.0	7.0	*14.5
Savannah	18.5	20.5	7.0	*13.0
Birm'ham, Ala.	20.0	22.0	8.0	11.0
Mobile	21.0	23.0	9.0	10.0
Montgomery	22.0	24.0	9.0	14.5
Jackson, Miss.	20.0	22.0	7.0	*13.0
Vicksburg	19.5	21.5	7.0	*13.0
Jacksonville, Fla.	18.0	20.0	8.0	10.0
Miami	19.5	21.5	8.0	13.5
Pensacola	21.5	23.5	9.0	12.0
Tampa	18.0	20.0	8.0	12.5
Lexington, Ky.	19.0	21.0	6.0	11.0
Covington	18.5	20.5	6.0	10.5
Louisville	19.0	21.0	6.0	10.0
Paducah	18.0	19.0	6.0	8.5

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon. Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Denver, Colo.	19.0	21.0	5.0	11.0
Pueblo	19.0	21.0	5.0	13.0
Grand Junction	21.5	23.5	5.0	15.0
Casper, Wyo.	19.5	21.5	5.0	11.5
Cheyenne	19.5	21.5	5.0	13.0
Butte, Mont.	21.0	....	6.0	14.5
Billings	22.5	24.5	6.0	14.5
Helena	22.5	24.5	6.0	17.5
Great Falls	22.5	24.5	6.0	14.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Twin Falls, Ida.	23.0	25.0	6.0	18.0
Boise	22.5	24.5	6.0	18.0
Albu'que, N. M.	18.5	20.5	*6.5	13.0

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
San Francisco	17.0	18.0	4.0	11.5
Los Angeles	16.5	17.5	4.0	9.0
Fresno, Calif.	17.5	18.5	4.0	11.0
Phoenix, Ariz.	21.0	22.0	6.0	‡16.0
Reno, Nev.	19.5	20.5	5.0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank-wagon lots except in Phoenix where discount is 1 cent.

‡Includes 5-cent state tax.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Atl'tic City, N.J.	14.0	17.5	4.0	9.0
Newark	14.0	17.5	4.0	7.5
Annapolis, Md.	15.6	19.1	5.0	10.0
Baltimore	15.0	18.5	5.0	8.0
Cumberland	16.6	20.1	5.0	12.7
Wash'g'n, D. C.	13.0	16.5	3.0	9.0
Danville, Va.	17.5	21.0	6.0	12.9
Norfolk	16.0	19.5	6.0	11.3
Petersburg	16.5	20.0	6.0	11.7
Richmond	16.5	20.0	6.0	11.7
Raonoke	17.5	21.0	6.0	12.9
Charles'n, W. Va.	15.8	19.3	5.0	12.6
Parkersburg	15.1	18.6	5.0	11.2
Wheeling	15.0	18.5	5.0	12.2
Charlotte, N. C.	18.4	21.9	7.0	12.6
Hickory	18.9	22.4	7.0	13.0
Mt. Airy	18.7	22.2	7.0	12.8
Raleigh	18.0	21.5	7.0	12.1
Salisbury	18.5	22.0	7.0	12.7
Charleston, S.C.	17.0	20.5	7.0	11.3
Columbia	18.3	21.8	7.0	12.6
Spartanburg	18.7	22.2	7.0	12.9

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Omaha	18.4	20.4	6.0	10.4
McCook	19.1	21.1	6.0	11.1
Norfolk	18.8	20.8	6.0	10.8
North Platte	19.2	21.2	6.0	11.2
Scottsbluff	19.9	21.9	6.0	11.9

Note—Discounts to dealers: where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Philadelphia, Pa.	16.5	17.5	5.0	9.5
Pittsburgh	17.5	19.5	5.0	10.0
Allentown	17.0	18.0	5.0	9.5
Erie	17.5	18.5	5.0	8.0
Scranton	16.75	17.0	5.0	10.0
Altoona	17.5	19.5	5.0	9.5
Dover, Del.	17.0	17.0	5.0	10.0
Wilmington	17.0	17.0	5.0	9.0
Springf'ld, Mass.	14.0	17.5	4.0	7.5
Worcester	14.0	17.5	4.0	7.75
Hartford, Conn.	13.5	17.0	4.0	7.0
New Haven	13.0	16.5	4.0	7.5
Providence, R. I.	12.5	16.0	3.0	7.0

Note—Tank-wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
N. Orleans, La.	18.5	22.0	‡9.0	12.0
Baton Rouge	17.5	21.0	††7.0	11.5
Alexandria	18.5	22.0	†*8.0	11.0
Lafayette	19.0	22.5	‡*8.0	12.5
Lake Charles	19.0	22.5	†*8.0	11.0
Shreveport	17.0	20.5	††7.0	10.0
Knoxville, Tenn.	21.0	24.5	8.0	14.0
Memphis	19.0	22.5	8.0	11.0
Chattanooga	20.5	24.0	8.0	11.5
Nashville	20.0	23.5	8.0	10.0
Bristol	18.75	21.5	8.0	14.5

*Includes city tax of 1 cent.

†Includes 1-cent parish tax. ‡Includes 3-cent parish tax.

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Post deal	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Albany, N. Y.	14.0	17.5	5.0	7.75
*Met. N. Y.:				
Manhtn., Bronx	14.2	19.2	5.0	7.25
Staten Island	14.2	19.2	5.0	7.25
Qu'ns & Br'klyn	14.2	19.2	5.0	7.25
Buffalo	14.5	18.0	5.0	8.25
Rochester	14.5	18.0	5.0	8.25
Syracuse	14.5	18.0	5.0	8.75
Boston, Mass.	11.5	15.0	4.0	7.50
Portland, Me.	14.5	18.0	5.0	7.75
Manch'ter, N. H.	15.0	18.5	5.0	8.00
Burlington, Vt.	16.5	20.0	5.0	8.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Southwestern District

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Dallas, Tex.	15.0	17.0	5.0	8.5
Fort Worth	15.0	17.0	5.0	8.5
Houston	16.0	18.0	5.0	8.5
San Antonio	16.0	18.0	5.0	8.5
El Paso	17.0	19.0	5.0	8.0
Muskogee, Ok.	17.0	19.0	5.0	8.0
Okla. City	17.0	19.0	5.0	8.0
Tulsa	17.0	19.0	5.0	8.0
Ft. Smith, Ark.	17.0	19.0	5.0	8.0
Little Rock	19.5	21.5	7.5	9.5
Texarkana	16.5	18.5	5.0	8.5

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Ohio points	17.5	19.5	5.0	*13.5

*Includes state tax of 1 cent.

Canada*

Imperial 3-Star Gasoline
IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Hamilton, Ont.	21.0	23.5	6.0	17.0
Toronto, Ont.	21.0	23.5	6.0	17.0
Brandon, Man.	30.8	33.8	7.0	22.8
Winnipeg, Man.	29.2	32.2	7.0	20.7
Regina, Sask.	29.5	32.5	7.0	22.0
Saskatoon, Sask.	32.3	35.3	7.0	24.8
Edmonton, Alta.	31.7	34.7	7.0	24.2
Calgary, Alta.	29.0	32.0	7.0	21.5
Vancouver, B. C.	26.0	29.0	7.0	24.0
Montreal, Que.	19.5	22.0	6.0	17.5
St. John, N. B.	25.0	29.0	8.0	19.5
Halifax, N. S.	25.0	29.0	8.0	19.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal where discounts below station price are one-half cent per gallon less.

Retail Price Changes

Atlantic Refining Co. May 28 advanced tank-wagon and station gasoline .5 cent and reduced tank-wagon kerosene .5 cent in Wilmington; May 14 reduced tank-wagon and station gasoline 1 cent in Hartford; June 11 advanced tank-wagon and station gasoline .5 cent in Providence and Worcester.

Imperial Oil, Ltd., June 13 reduced tank-wagon and station gasoline 1 cent in Regina, Saskatoon, Edmonton and Calgary.

Socony-Vacuum Oil Co., Inc., June 19 reduced tank-wagon and station gasoline 1 cent in Boston.

Crescent's 33,928-Bbl. Well

The Continental Oil Co. No. 2 McConnell, NW SE SE section 28-17-4w, in the Crescent field of Logan County, justified the claim that had been made that it was the largest well drilled in Oklahoma this year Monday when it was given a potential rating of 33,928 bbls. of oil a day. The potential was based on the following four-hour flow: First hour it flowed 1,950 bbls.; second hour, 1,497 bbls.; third hour, 1,380 bbls.; fourth hour, 1,364 bbls.

Previously, the title of "biggest producer" rested with the Sinclair Prairie Oil Co. and others No. 1 Franklin Community, SE NW SE section 21-10-2w, in the Moore pool of Cleveland County. After deepening from 7,291 feet to 7,318 feet, it flowed as follows on a three-hour test: First hour, 1,571 bbls.; second hour, 1,414 bbls.; third hour, 1,257 bbls. This was a total of 4,242 bbls. for the three hours, as compared with a total of 4,827 bbls. for the first three hours of the No. 2 McConnell test.

The Crescent well was producing from second Wilcox sand, topped at 6,207 feet; total depth, 6,305 feet. Prior to the potential test, it flowed 3,262 bbls. in two hours. Gas gauged 39,000,000 feet, as against 90,000,000 feet in the Moore well. Both the Moore and Crescent areas are due for a considerable increase in activity as a result of the two big strikes.

A. C. Glassell, Sr., president of the Pelican Oil & Gasoline Co., Shreveport, has been on business trips to Dallas, Tex., and Baton Rouge, La., during the past week.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of June 23, 1936

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below (3d. gr.)	.04¾	.05
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06¼
60-62 400 grades:		
62 octane and below	.04¾	.05
63-67 octane	.05⅜	.05⅝
68-70 octane (regular)	.06	.06⅛
64-66 375	.04⅞	.05⅛
68-70 360	.05	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅜	.05⅛
68-70 octane (regular)	.06	.06⅛
60-62 400	.04⅞	.05
64-66 375	.05	.05⅛

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:	
62 octane and below	.05¾
63-67 octane	.06½
68-70 octane (regular)	.06¾
60-62 400	.05¾ .06

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:	
62 octane and below	.05¾
63-67 octane	.06⅛
68-70 octane (regular)	.06¾

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¾	.05
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400 grades:		
62 octane and below	.04¾	.05
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
64-66 375	.04⅞	.05
68-70 360	.05	.05⅛

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:	
Below 60 octane	.05⅝
60-64.9 octane	.06¾
65-70 octane	.07
61-66 375	.05¾
68-70 350	.06

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.07½
58-60 400	.07½	.08

EAST COAST—(domestic)—

U. S. Motor, below 60 octane:	
*New York (Bayonne)	.06½
Baltimore	.06½
U. S. Motor, 60-64.9 octane:	
*New York (Bayonne)	.06¾
Philadelphia	.06¾
Boston	.06¾
Baltimore	.06¾
Charleston, S. C.	.06¾
U. S. Motor, 65 and above:	
*New York (Bayonne)	.07
Philadelphia	.07
Boston	.07
Baltimore	.07
Charleston, S. C.	.07

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05⅝	.05¾
60-64.9 octane		.06
65 octane and higher	.06¼	.06¼

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05½
52-54 450 (blending)	.05½
54-56 450 (blending)	.05⅝

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02½
Grade 18-55	.03	.03¼
Low vapor pressure grade:		
*14 lb. v.p. (max.)	.03½	.03⅝
*12 lb. v.p. (max.)		.04

*Nominal.

NORTH TEXAS—

Grade 26-70	.02¼	.02⅜
Grade 18-55	.02⅞	.03

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.02¾	.03

CALIFORNIA—

75-85 375-390	.06½	.07½

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-350 i.b.p., 110-125, flash, 500-520 e.p.	.04	.04½
46-48 gr., 210-230 i.b.p., 480 max. e.p.		.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03¾	.04
42-44	.04	.04½

NORTH TEXAS—

41-43	.03¾	.04

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04¾	.04½

PENNSYLVANIA (inland refineries)—

45	.05¼	.05⅝
46	.05⅝	.05½
47	.05½	.05⅝

CHICAGO (Based on Group 3)—

41-43	.03¾	.04
42-44	.04	.04½

CALIFORNIA (Pac. Coast market)—

38-40 high burning test	.03½	.05

NEW YORK (Bayonne, N. J.)—

*41-43	.04⅝	.04⅞

GULF COAST (domestic)—

41-43	.03⅞

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03⅞	.03⅝
No. 1 straw, 38-40	.03⅛	.03¼
No. 2 straw, 32-36	.02⅝	.02⅞
No. 2 dark, 32-36	.02⅝	.02⅝
No. 3, 28-32	.02½	.02⅝
No. 3, 15 and above, 28-32	.02⅝	.02½

NORTH TEXAS—

No. 1 prime white, 38-42	.02⅝	.02½
No. 1 straw, 38-40	.03¼	.03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.02⅞	.03

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03½	.03⅝
No. 3, 28-32	.03⅛	.03½

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03¼	.03⅜
No. 2 straw, 32-36	.02⅞	.03
No. 2 dark, 32-36	.02⅝	.03
No. 3, zero to 15, 28-32	.02⅝	.02⅞
No. 3, 15 and above, 28-32	.02⅝	.02½

NEW YORK (Bayonne, N. J.)—

*No. 1	.04⅝	.04⅞
*No. 2		.04½
*No. 4		.03⅝

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02½	.02⅝
No. 4, 24-28, low cold test	.95	1.05
No. 4, 15 and above, 24-28	.80	.85
No. 5, low cold test	.72½	.80
Below 18 fuel oil, industrial	.70	.75

NORTH TEXAS—

U.G.I. gas oil	.02¼	.02⅜
No. 4, 24-28, low cold test	.95	1.00
No. 5, low cold test	.72½	.80
Below 18 fuel oil, industrial	.65	.75

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U.G.I. gas oil	.02⅝	.02⅞
10-14 fuel oil, industrial	.70	.75

ARKANSAS (Ark. N. La., Miss. delivery)

10-14 fuel oil, industrial	.60	.65

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02½
No. 4, 24-28	.95	1.00
No. 4, 15 and above, 24-28	.77½	.82½
No. 5, 18-22	.72½	.75
No. 6, 10-16	.62½	.67½

PENNSYLVANIA (inland refineries)—

36-40	.04⅝	.04¾

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.00	1.20
24 plus diesel	1.00	1.25
24 plus diesel (bunkers)	1.10	1.30
12-16 (bunkers at tidewater)	.85	.95
10-16 (cargo lots)	.80	.95
12-17 (tankcars)	.70	.95
San Joaquin Valley:		
10-18 (tankcars)	.65	.75
San Francisco:		
24 plus diesel, per bbl.	1.30	1.35
24 plus diesel (bunkers)		1.35
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03¼	.03⅝
28-30 diesel (bunkers)		1.50
Bunkers (bulk cargoes)		.90
Bunker C (bunkers)		.90

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 diesel (lighterage 6¼ plus per bbl.)		1.65
28-30 diesel (tankers)		.04¼
*Bunkers C (to ocean-going ships in N. Y. harbor)		1.05
Industrial fuel (tankcars)		.03⅜

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:	
190-200 D, 15-25	.21½
150-160 D, 0-10	.18½
150-160 D, 15-25	.18
150-160 E, 15-25	.17½
100-110 D, 0-10	.17
Steam refined:	
631 green (treated)	.14
600 dark green (untreated)	.06 .07½

PENNSYLVANIA—

Bright Stocks (Pennsylvania grade No. 8 color, 145-50 at 510; 540-550 flash):

10 pour test	.24½ .25
15 pour test	.23½ .24
20 pour test	.22½ .23
25 pour test	.21½ .22
Steam refined:	
600	.13½ .14
650	.14½ .15
600 Pennsylvania flash	.15½ .16
630 flash	.17½ .18
600 Warren E filtered	.15½ .16

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.10
180-3	.11½
180-4	.10¾
200-3	.11¾
200-4	.11½
250-3	.13¾
250-4	.13½
280-3	.14¾
280-4	.14¼
300-3½	.15½
400-3½	.16
100-2 paraffin oil	.05¾
15-20 Cold Test:	
200-3	.10¾
200-4	.10½
240-3	.12¾
240-4	.12½
280-3	.13¾
280-4	.12¾

GULF COAST—

Pale Oils:		
200-3	.06½	.07
300-3	.07	.07½
500-3½	.08	.08½
750-3½	.08½	.09
1,200-3½	.09	.09¼
2,000-4	.09¼	.09½
Red Oils:		
200-5-6	.06½	.06¾
300-5-6	.06¼	.07
500-5-6	.07½	.08
750	.08	.08½
1,200-5-6	.08½	.09

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3		.06
200-2½-3		.06¼
300-3-3½		.06½
400-3-4	.08½	.09¼
450-3-4	.09¾	.10
550-3-4	.10	.10¼
600-3-4	.10¼	.10½
Red Oils:		
200-4-5		.06
300-5-6		.06¼
350-5-6	.07	.08
400-5-6	.08	.08¼
450-5-6	.08¼	.08½
500-5-6	.08½	.09
600-5-6½	.09	.09½
700-6½ plus	.09¾	.10
750-6½ plus	.10	.10¼
900-6½ plus	.10¼	.10½

PENNSYLVANIA

150 vis. at 750° F., color, 400-405 flash:		
Zero pour test	.20	.20½
10 pour test	.19	.19½
15 pour test	.18½	.19
25 pour test	.17½	.18
180 vis. at 70° F., 3 color:		
25 pour test	.20	.20½
200 vis. at 70° F., 3 color:		
Zero pour test	.23½	.24
10 pour test	.22½	.23
15 pour test	.22	.22½
25 pour test	.21	.21½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅝

PENNSYLVANIA—(inland refineries)—

122-124 (a.m.p.) w.c. scale	.0230	.0235
124-126 (a.m.p.) w.c. scale	.0235	.0240

NEW YORK—

Wax in bags fully refined:	
123-125 (a.m.p.) wax	.0445
125-127 (a.m.p.) wax	.0455
128-130 (a.m.p.) wax	.0480
130-132 (a.m.p.) wax	.0505
133-135 (a.m.p.) wax	.0535
135-137 (a.m.p.) wax	.0560
124-126 (a.m.p.) w.s.	.0240 .0250
124-126 (a.m.p.) y.s.	.0240 .0245
Petrolatum in barrels, carload lots:	
Dark green	.01⅞
Amber	.02⅞ .03
Extra amber	.03 .03⅛
Lily white	.06⅝ .06¾
Snow white	.07⅜ .07⅝
Cream	.05⅝ .05¾

Export Prices

GASOLINE

GULF COAST—		
U. S. Motor	.05⅛	.05¼
60-62 400	.05¼	.05⅜
61-63 390	.05⅜	.05½
64-66 375	.05½	.05⅝
LOS ANGELES—		
U. S. Motor grades:		
53-55 octane		.04½
55-56 octane	.04½	.04⅝
65-67 octane	.04⅝	.05
67-69 octane	.05	.05¼
Above 69 octane	.05¼	.05½
65 and above 400 e.p.	.05½	.06

KEROSENE

GULF COAST—		
41-43 prime white		.03⅜
41-43 water white		.03¾
41 water white		.04
LOS ANGELES—		
41-43 water white	.04⅝	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.22	.22½
600 S.R. unfiltered	.20	.20½
650 S.R. unfiltered	.21	.21½
600 flash S.R.	.22	.22½
630 flash S.R.	.24	.24½
Bright Stocks:		
8 color	.28	.28½
6½ plus color in dilution	.27	.27½

NEUTRAL OIL

200-3 color	.27	.27½
150-3 color	.23½	.24

PARAFFIN WAX

NEW YORK (prices per pound)—		
122-125 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0240	.0245

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

East Texas*	$1.15
Van, Tex.†	1.02
Altus and Tipton, Okla.‡	1.08
Other fields (see gravity table).	

*All companies. †Pure Oil Co. ‡Gypsy Oil Co.

West Texas

Crane, Upton, Howard, Glasscock and Mitchell Counties	$ .80
Winkler County	.85
Lea County, N. Mex.	.85
Pecos County*	.85
Pecos shallow†	.75

*Shell Petroleum Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

Rocky Mountain States

(Effective January 9, 1936)

Iles, Colo., light*	$1.06
Iles, Colo., heavy*	1.00
Greybull, Wyo.*	1.28
Torchlight, Wyo.*	1.28
Grass Creek, Wyo., light*†	1.28
Grass Creek, Wyo., heavy*†	.72
Hamilton Dome, Wyo.*	.67
Elk Basin, Wyo., light*†	1.28
Frannie, Wyo., heavy*	.72
Frannie, Wyo., light (Feb. 24, 1936)*	.78
Hogback, N. Mex.*	1.21
Pondera, Mont. (Jan. 29, 1936 *	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.11
Rock Creek, Wyo.†	1.12
Artesia, N. Mex. (Dec. 1, 1923)‡	.75
Maljamar, N. Mex. (Sept. 29, 1933)‡	.75
Fort Collins and Wellington, Colo. (Jan. 9, 1936)‡	See Note
Florence, Colo.	.98
Lance Creek, Wyo.	.85
Lost Soldier, Wyo. (Sept. 30, 1933)	.88
Hudson, Wyo. (June 2, 1931)	.65
Sunburst, Mont. (June 5, 1936)	1.15
Cat Creek, Mont.	1.28
Cut Bank, Mont.	1.35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Note—Fort Collins and Wellington are not posted, price 5 cents under quotation of Salt Creek crude of like gravity (Fort Collins 36°; Wellington 33°). *Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Southwest Texas

(January 9, 1936)

Saxet	$ .90
Mirando	.85
Pettus	1.25
Salt Flat*	.97
Salt Flat‡	.97
Darst Creek*	.97
Darst Creek†	.97
Luling	90
Lytton Springs	1.00
Duval County	.85

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duval by Texas Co.

Middle Western States

OHIO OIL CO.

Lima (Jan. 10, 1936)	$1.25
Illinois (Jan. 9, 1936)	1.23
Princeton, Ind. (Jan. 9, 1936)	1.23
Midland, Mich. (June 15, 1936)*	1.42
Midland, Mich. (June 15, 1936)†	1 42
West Branch, Mich. (June 15, 1936)	1.26
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (Jan. 9, 1936)	1.30
Kentucky River (Jan. 9, 1936)	1.38
Western Kentucky (Jan. 9, 1936)	1.23

*Posted by Pure Oil Co. and includes Greendale, Porter, Beaverton and Crystal crudes. West Branch, Mich., by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co. †Simrall Corp.

Gulf Coast

(January 9, 1936)

Cleveland, Tex.	$1 10
Hardin, Tex.	1.03
Greta, Tex.	.90
Refugio, Tex., heavy	.90
Tomball, Tex.	1.30
LaFitte, La.	1.12
Livingston, Tex.	1 15
Bosco, La. (Jan. 16, 1936)	1.05
Evangeline, La.	1.07
Welsh, La.	.96

Cleveland and Hardin by Magnolia; Greta by Texas Co.; Refugio by Humble; Tomball by Humble and Magnolia; LaFitte by Texas Co.; Bosco by Pure; Evangeline and Welsh by Stanolind Oil & Gas Co.; Livingston by Shell Petroleum Corp.

North Louisiana and Arkansas

Smackover, all grades (Jan. 10, 1936)*	$.75
Smackover, all grades (Jan. 9, 1936)†	.80
Tullos and Urania (Jan. 10, 1936)	.97
Nevada, Ark. (Jan. 10, 1936)	.65
El Dorado East Field (Jan. 16, 1936)	.75
Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)*	1.10
Lisbon, Ark. (Jan. 10, 1936)*	1.10
Elm Grove, La. (Jan. 10, 1936)	80

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16). Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana, El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita Counties, Arkansas.

Easern States

TIDE WATER PIPE CO.
(Effective Jan. 13, 1936)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.
(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2 17
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.12
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1 42

PENNZOIL CO.
(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines:	
Group A — Includes Cochran, Franklin, Hamilton and Doolittle districts.	2.42
Group B — Includes Titusville district.	2.41
Group C — Includes Turkey and Tidioute districts.	2.40
Group D — Includes Bear Creek and Porkey districts.	2.39
Group E — Includes Edeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	2.36

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Jan. 13, 1936)

Cabin Creek, W. Va.	$2.12
Bradford Hollow, W. Va.	2.12
Kelly Creek, W. Va.	2.12

Canada

Ontario (Sept. 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Feb. 3, 1936 :†	
Clean naphtha	2 70
Discolored naphtha	2.46
Crude oil, 50 gravity	2.32
Crude oil, 45 to 49.9	2.12
Crude oil, 40 to 44.9	1.55

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$ 74

*F.o.b. ship, based on April transactions and exclusive of production and export taxes and bar dues.

Crude Prices by Gravities

Gravity—	Oklahoma, Kansas, and Salt Creek, Wyo.	Central and North Texas	East Central Texas	North Louisiana, Arkansas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	West Texas and Lea County, New Mexico	Gulf Coast, Texas and Louisiana	Anahuac and Dickinson, Texas	Iowa and Cameron Meadows, Texas
Below 20	....	....	....	....	....	....	....	....	$ 92	....	$.82
20-20.9	....	....	....	....	....	....	....	....	.94	....	.84
21-21.9	....	....	....	....	....	....	....	....	.96	....	.86
22-22.9	....	....	....	....	....	....	....	....	.98	....	.88
23-23.9	....	....	....	....	....	....	....	....	1.00	....	.90
24-24.9	....	....	....	....	....	....	....	....	1.02	....	.92
Below 25	$.86	....	....	$.78	....	....	....	....	....	....	....
25-25.9	.88	....	....	.80	....	....	....	....	1.04	....	.94
26-26.9	.90	....	....	.82	....	....	....	....	1.06	....	.96
27-27.9	.92	....	....	.84	....	....	....	....	1 08	....	.98
28-28.9	.94	....	....	.86	....	..	....	....	1.10	....	1.00
Below 29	.94	$.84	$.91	....	....	....	....	$75	....	....	....
29-29.9	.96	.86	.93	.88	....	....	....	.76	1 12	....	1.02
30-30.9	.98	.88	.95	.90	....	....	....	.78	1.14	$1.04	1.04
31-31.9	1.00	.90	.97	.92	....	....	....	.80	1.16	1.06	1.06
32-32.9	1.02	.92	.99	.94	....	....	....	.82	1.18	1.08	1.08
33-33.9	1.04	.94	1.01	.96	....	....	....	.84	1 20	1.10	1.10
34-34.9	1.06	.96	1.03	.98	....	....	....	.86	1 22	1.12	1.12
Below 35	....	....	....	....	$.86	$.81	....	....	....	....	....
35-35.9	1 08	.98	1.05	1.00	.88	.83	$1.24	.88	1.22	1 14	1.12
36-36.9	1.10	1.00	1.07	1.02	.90	.85	1.26	.90	1 22	1.16	1.12
37-37.9	1.12	1.02	1.09	1.04	.92	.87	1.28	.90	1.22	1 18	1.12
38-38.9	1.14	1.04	1.11	1.06	.94	.89	1.30	.90	1.22	1.20	1.12
39-39.9	1 16	1.06	1.13	1.08	.96	.91	1.32	.90	1.22	1 22	1.12
40 and over	1.18	1.08	1.15	1.10	.98	.93	1.34	.90	1.22	1 24	1.12

Magnolia Petroleum Co. in the East Central Texas field pays 7 cents per barrel less than above posted prices in that field.

W. E. Heller, of Mount Pleasant, Mich., who has been associated with Walter J. Leonard, Jr. and Sr., for many years in Pennsylvania, Cuba and South American fields, has been named drilling superintendent for the Leonard Drilling Co., leading independent operating firm in central Michigan fields. Dan Roach is in charge of production.

STANDARD OIL CO. OF CALIFORNIA

Crude oil prices at the well effective March 7, 1936

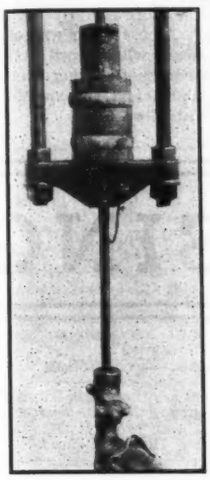
Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Domingues	Elwood Terrace	Torrance	Richfield	Whittier E.Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset except Lakeview Area	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
11-14.9	$.80	$ 79	$.74	$.78	$.79	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.65	$.70	$.65	$.70	$.70	....	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	..	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	..	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	..	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	..	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.66	.74	.66	.74	.71	$ 70	....
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.68	.78	.68	.78	.72	.70	....
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$.78	.73	.71	.82	.71	.82	.74	.70	....
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.74	.87	.74	.86	.78	.72	....
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$ 84	$.79	....	.96	.88	.93	.82	.92	.78	.80	.77	.92	.77	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1 06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.80	.97	.80	.94	.86	.79	....
25-25.9	1.03	.95	.82	1.02	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	.83	1.01	.83	.98	.90	.83	....
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	.86	1.06	.86	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	.88	1.10	.88	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.16	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	.91	1.15	.91	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1 03	1.14	1.03	1.02	.94	1.20	.94	1.14	....	....	....
30-30.9	1.21	1 19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	.97	1.25	.97	1 18	....	....	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1 22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	.99	1.29	.99	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.26	1.16	1.13	1.02	1 34	1.02	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.04	1.38	1.04	....	....	....	$1.19
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	....	....	1.23
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	....	....	1.27
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	....	....	1.31
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	....	....	1.35
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	....	1.39
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	....	....	1.43
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River and Round Mountain 70 cents for all grades. Kern Front 70 cents for all grades.

NEW OR IMPROVED EQUIPMENT

Teco Shock-Absorbers Enable Rods to "Float" on Rubber

The Teco sucker-rod shock-absorber, manufactured by the Engineering Co. of Tulsa, under patent, is a rubber cushion inserted between the polished-rod clamp and beam-hanger carrier-bar of a pumping well, so that the sucker-rods "float" on rubber. According to the manufacturer, dynamometer tests have proven that these shock-absorbers reduce the peak polished-rod load, or sucker-rod stress, between 10 and 15 per cent on the average well. Polished-rod horsepower, or energy input to sucker-rods per barrel of fluid lifted, is reduced 10 to 20 per cent. Other advantages claimed are a reduction in difference between maximum and minimum loads, which is the fatigue-producing load; increased lift efficiency; insulation of sucker-rods from vibrations originating in surface equipment, gears or beam-hanger linkage and from gas-engine impulses. The shock-absorbers are furnished in three sizes, having end-plate diameters of 6 inches, 8 inches and 10 inches to fit various sizes of beam-hangers, and for various operating conditions.



Bulletins, Booklets and Other Literature for the Trade

The Staynew automatic air filter, Model A, for all ventilating purposes, is fully described and illustrated in an eight-page bulletin prepared for distribution by the Staynew Filter Corp., Rochester, N. Y.

Link-Belt Co., Chicago, has published a 208-page catalog devoted exclusively to power-transmission equipment. It features the recently announced line of Link-Belt antifriction roller bearing units.

A four-page bulletin prepared by the Burt Manufacturing Co., Akron, Ohio, is devoted to the company's newest contribution to roof ventilation, the free-flow gravity ventilator.

"Star Spudders" is the title of a 24-page booklet offered by the Star Drilling Machine Co., Akron, Ohio, covering this company's complete line of portable drilling machines.

The Bristol Co., 330 West Forty-second Street, New York, announces Bulletin No. 440 covering its new series of Ampliset free-vane controllers for time-temperature, flow, liquid level, pressure, time-pressure and humidity.

An illustrated bulletin offered by the Grove Regulator Co., 1072 Bryant Street, San Francisco, Calif., contains many installation photographs as well as interesting sectionalized views of the Grove universal regulator, especially built for extreme pressures as high as 3,500 pounds per square inch.

Pumps designed specifically for long service handling hot or cold water, acids, alkalis, brine, and other corrosive fluids are described in a bulletin issued by the Lawrence Pump & Engine Co., Box 70, Lawrence, Mass. This bulletin gives performance tables, dimensions, parts, etc.

"The Story of Ten Caterpillar-Diesels," a 24-page booklet prepared for distribution by the Caterpillar Tractor Co., Peoria, Ill., summarizes in text and pictures, records of the company's diesel engine production.

The latest issued of the Lufkin Line, published by the Lufkin Foundry & Machine Co., Lufkin, Tex., and always highly interesting, contains well-edited historical articles on early Texas, devoting only a few pages to pumping units manufactured by the company.

The Harnischfeger Corp., Milwaukee, Wis., offers a new bulletin (No. R-1) describing Smooth-arc welding electrodes.

Among helpful articles in the current number of the Dutch Boy Painter, published by the National Lead Co., 111 Broadway, New York, is one on removing paint with torch and scraper.

Men Widely Known in the Equipment Field

Richard R. Bloss, vice president of International-Stacey Corp., has taken over management of International Derrick & Equipment Co., in Beaumont, Tex., a subsidiary of International-Stacey. Burwell Boykin, Jr., formerly in charge, is retiring from active service but will continue as a member of the board of directors. The Beaumont division specializes in the design and construction of heavy rotary drilling equipment.

Mr. Bloss has been connected with International Derrick & Equipment Co. of Columbus, Ohio, for 15 years and to a large extent has been responsible for the development of the company's present line of products. Mr. Bloss has a pilot's license and flies his own ship.

RICHARD R. BLOSS

Taylor "Motosteel" Diaphragm Valve Motor Is Announced

The redesigned line of Taylor "Motosteel" diaphragm valve motors announced by Taylor Instrument Cos., Rochester, N. Y., employs an all-steel welded construction which is lighter and stronger and has greater resistance to shock and strains.

A smoother, quicker-acting, and more powerful valve motor is said to be obtained by a larger molded diaphragm of advanced design. Formed impressions in the top plate provide freer access of air pressure to the diaphragm in starting, thus insuring a greater effective initial force. A longer and larger diameter spring gives greater initial compression, less hysteresis, and more accurate response. A ball-bearing, roller-bearing stem guide insures a free rolling action throughout the entire stroke.

Spring and spring adjusting nut, as well as other moving parts, are fully enclosed, but readily accessible by removing the side plates. A valve-position indicator readily establishes the valve opening. All parts are specially treated to resist corrosion.

Transformers of Newer Types Are Put on Market by G. E.

In the new current transformers announced by the General Electric Co., the primaries are wound on porcelain spools, which serve as the main part of the insulation between the primary and secondary circuits. The 23- and 34.5-kv. transformers each have one porcelain-spool unit. For 46 kv. and above, each transformer has two or more porcelain-spool units connected in cascade. The current transformer element is mounted in a shallow base and extends up into a porcelain shell, which is used as the high voltage bushing.

New potential transformers are designed for use only on three-phase, four-wire grounded systems. They replace the single-bushing, conventional type. In the lower voltage classes, 69 kv. and below, the units consist of a single core-and-coil assembly mounted in a shallow tank and extending up into a porcelain shell which serves as the high-voltage bushing. In voltages above 69 kv. the transformer consists of two or more core-and-coil units, mounted vertically and connected in cascade.

Totally Enclosed D-C Motor

Designed for general industrial service and particularly for use where abrasive and metallic dust is present or where splashing liquids and mild chemicals are encountered, a new line of fan-cooled totally enclosed direct-current motors is announced by Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. Sizes of the new SK motors range from 5 to 75 horsepower for 115, 230 and 550 volts direct current. These motors are built so that all foreign matter is excluded from the interior.

The International Nickel Co., 67 Wall Street, New York, has for distribution a 20-page buyers' guide to warehouse stocks of nickel-alloy steels.

Washington Will Cooperate in Checking With States

WASHINGTON, D. C., June 22.—Arrangements have been completed through the Petroleum Conservation Division, department of the interior, whereby a list of tankcar shipments from the East Texas field will be furnished daily, beginning July 1, by Federal Tender Board No. 1, Kilgore, Tex., to officials engaged in the administration of state gasoline tax laws. This daily report will show the tankcar number and initials, capacity, contents, shipper, consignee and destination of each shipment.

These reports will be prepared and distributed to state officials pursuant to the Connally Act, which prohibits the shipment in interstate and foreign commerce of petroleum and its products produced in excess of state law. The cooperative arrangement is expected to provide a method for checking possible diversions of tankcar shipments and to furnish information to state administrative officers for use in checking possible gasoline tax evasions.

Administrative officers of states, to which tankcar shipments regularly are made from the East Texas field, have expressed their desire to receive the reports and check them against possible diversions.

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OBITUARY

GENE R. SMITH, 35, geologist of Dallas and Houston, Tex., died in Houston, June 14.

J. F. MURPHY, 70, veteran drilling contractor of Sapulpa, Okla., died last week from injuries received in an automobile accident. He had been in the oil business 54 years. A native of Ireland, he accompanied his parents to Bradford, Pa., when 10, and after leaving school at 17 began dressing tools. He followed the wildcatters into West Virginia, Ohio and Indiana, and in 1903 to Independence, Kan. He was one of the first contractors in the Cleveland pool of Pawnee County, Oklahoma, and drilled the third well in the Glenn-pool of Tulsa County for Selby Oil & Gas Co. In the early days of Skelly Oil Co. he was a superintendent.

WILSON KEYS, consulting geologist and producer of San Angelo, Tex., is dead and E. (Mac) McLaughlin, consulting geologist, seriously injured, as result of an automobile wreck near Midland, Tex.

H. N. LASSITER, representative of Drane Tank Co., Fort Worth, Tex., died of a heart attack at Pampa, Tex., June 19.

SIDNEY T. MALLORY, 75, Oklahoma oil pioneer and widely known in the more easterly fields, died in Tulsa on Thursday, June 18. He was one of four brothers all now dead, who helped make history in the oil and gas business, the other brothers having been Lewis E., John, and Eugene Mallory. All were natives of Waterford, Pa.

CLASSIFIED ADVERTISING

Royalties—Production

VEGAS DOME ROYALTIES.—Good block for sale against New Mexico's great deep test well. Wm. H. Springer, Las Vegas, New Mexico.

FOR SALE—54 acres, royalty in Tom Ball oil field, Harris County. Box 165, McGregor, Texas.

Northwest Ector County, Texas, presents real opportunity to oil operators. New area just being opened. Prices now low but certain to advance due to three good wells just brought in flowing 400 to 700 bbls. 36 gravity oil from pay found around 4200 ft. Close In Drilling Blocks For Sale. Wire,
H. B. OPP, Burnet, Texas.

Producing and Non-Producing Royalties. Bosco, Van, Rodessa, West Texas.
Wholesale — Retail.
W. E. HOUSEL
76 Beaver Street, New York City.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
214 Kennedy Bldg., Tulsa, Okla.

Brokers—Salesmen

Sell in the most active area in the United States — The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Securities and Exchange Commission. Inquiries invited.

B. D. BUCKLEY

Paul Brown Bldg., St. Louis, Mo.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

PRODUCING OIL ROYALTIES
(ALL FIELDS)
Bought, Sold and Quoted.
HENRY L. BAKER CO.
715 Van Nuys Bldg.,
Los Angeles, Calif.
Telephone Trinity 7391

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood. P. O. Box 2261, Tulsa, Oklahoma.

Royalties—Production

Van—East Texas—Louisiana Royalties
Bought—Sold.
WILLIAM MONROE LAYTON
40 Wall St., Suite 1437, New York City.

F. A. SANSOME
Mainstains a Complete Trading Organization for Brokers, Banks and Dealers
In
Oil Royalties.
522 Fifth Avenue, New York, N. Y.

I BUY AND SELL oil royalties and producing wells, East Texas field. B. A. SKIPPER, Longview, Texas.

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

RETAIL ROYALTY DEALERS—

If you are interested in High Class producing and non-producing royalties for investors write or wire

CHESTER IMES, Inc.
First National Building
Oklahoma City, Okla.

PRODUCING OIL ROYALTIES
for dealers.
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

SHERIDAN and GOVE Cos., Kansas drlg. blks. Royalties, Leases, Low Prices. Mutual Oil Enterprise, Oakley, Kansas.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception."
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Incorporations

DELAWARE CHARTERS: Complete incorporating and organizing service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Royalties—Production

Offerings Wanted
PRODUCING OIL ROYALTIES
(Wholesale Only)
M-K OIL COMPANY
20 Broad St., New York.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect Pl., East Orange, N. J.

OBION COUNTY, TENN. Drlg. Blk. Approx. 4,000 acres 4 to 6 miles from test being made. Also a few small blocks $3 to $5 per acre. Tenn. Lease & Roy. Co., 916 Exchange Bldg., Memphis, Tenn.

Producing-ROYALTIES-Non-Producing
Dealers Exclusively
Schedules and Engineers reports furnished
G. D. TERRIEN
412-13 Central Bank Bldg., Tulsa, Okla.

NO MORE DRY WELLS—Try our effective prospecting system; send immediately a printed plan of township and detailed plan of property where you are working. A preliminary report giving the possibilities to get gas or oil will be mailed promptly ABSOLUTELY FREE. Try it you will be surprised. Our motto, "NO OIL NO PAY." Address: Eurisko Prospector, 814 Insurance Exchange Bldg., Montreal, Canada.

OKLAHOMA CITY AND FITTS
Royalties Quoted Dealers
W. E. COOK
Perrine Bldg., Oklahoma City, Okla.

CHOICE TEXAS ACREAGE — Zapata, Jim Hogg, Cameron, Caldwell, Lamar and other counties, proven or semi-proven. East Texas and other producing properties. G. W. Elliott, 430 Bedell Building, San Antonio, Texas.

Leases—Production

SHELBY COUNTY at last has a producing well. Several tests now going down. This County has been worked out and approved by best geologists. Have 1,000 acres on structure for drilling contract. Small bonus. C. A. Parker, Box 451, Center, Texas.

NEW MEXICO Oil and Gas Leases and Royalties. Also inquiries and listings wanted. F R. WARN, Santa Fe, New Mexico.

NUECES COUNTY, Tex. Oil and Gas Records. Daily report $5 per month. The Daily Review, Corpus Christi, Tex.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

FOR SALE Oil & gas leases in proven territory and on leases adjoining new production where drilling is now being done, also leases for drilling contracts one or more wells. W. P. HARLEY, Bowling Green, Kentucky.

Leases—Production

½ int. 1,000 a. oil and gas leases S.W. Ind. and first well $2,500. Perfect geol. approved loc. near prod. F. M. Pierson, Box 748, Terre Haute, Indiana.

TALCO OIL PROPERTIES: Will buy or sell proven and semi-proven leases and royalties in Talco oil field, the hottest spot in Texas. Frank Robertson, Marvin Wells, and Frank Hill, Mt. Pleasant, Texas.

Write for oil properties, drilling blocks, leases, in new Louisiana fields. G. Lucas, 208 Milam Street, Shreveport, La.

FOR LEASE for oil purposes. Several hundred acres of land in Anderson County, Kans. Oil has been drilled in on this farm several years ago.
W. M. DARY
224 East 16th St., Long Beach, Calif.

TO SETTLE ESTATE, 2,500 acres in Titusville, Pa., field. 315 wells, twenty powers, shallow sands. Free of debt. Excellent results on adjoining leases by repressuring. Reasonable price and payments. Box 64, Bradford, Pa.

NORTHEAST New Mexico Leases well located at bargain prices. Orbee Oil Co., 1017 Colcord Building, Oklahoma City, Oklahoma.

FOR SALE—10,000 acres of leases on structure fully geologized in N. M. Well drilled below 4500 feet with good showings. Fully equipped with new all steel standard outfit, complete casing. A wonderful opportunity for experienced operator. Death of principal owner opens sale of entire proposition on reasonable basis. Buyer to complete. F. G. Thornton, 217 E. San Rapheal St., Colo. Springs, Colo.

SALESMEN — Vegas Dome offers a real opportunity for oil development in New Mexico. Test well has good showings of oil and gas. Fully geologized. Selected off setting leases for sale. Now is the time. Don't delay. Do it today. Write S. W. PRESSEY, Pueblo, Colorado.

Help Wanted

DRILLING MUD SALESMAN
WANTED FOR OIL FIELD WORK

Must be experienced in field and have own car. Salary, commission and expense allowance, depending on experience and ability. Write giving full particulars about yourself including employment history.

P. O. BOX 1183,
FORT WORTH, TEXAS.

Situations Wanted

A man of experience, integrity, ability would like connection with capital to engage in oil business. Address Box H-310, The Oil and Gas Journal, Tulsa, Okla.

CLEAN UP SALE—REFINERY EQUIPMENT

Treater tanks, hot oil pumps, cracking still, tubes and headers, storage tanks, heat exchangers, electric motors and other miscellaneous refinery equipment, now on hand, to be sold at ridiculously low prices.

Wire — Phone — Write

BROWN-STRAUSS CORPORATION
Main Office—1446 Guinotte Ave., Kansas City, Mo.
Branches
Sapulpa, Okla. Arkansas City, Kans. Pyote, Texas.

18—400 and 600 amp. Hansen 1931 model welding generator units, direct connected to 6-cyl. Wisconsin gasoline engines; units skidded or on 4-steel wheeled truck; excellent condition, good as new. Price ..... $750.00 ea. Pneumatic tire truck mounted—$100.00 extra.
No control board required or furnished.

MERTES MACHINERY COMPANY
Milwaukee, Wisconsin.

SEVERAL USED ROTARY RIGS
Spudders and Drilling Machines.
Several Steel Derricks & Rotary Equip.
J. S. Daniel, Beacon Bldg., Tulsa.

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25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio

125,000 feet 8'
29 lb. Standard 8 thread line pipe
A-1 Shape ready for shipment
F.O.B. Cars, Robinson, Illinois.
Inquiries Solicited.
Robinson Pipe Line Contracting Co., Inc.
Robinson, Illinois.

6" PIPE FOR SALE

12 miles of 6" 8-thread 19-pound Standard Screw Line Pipe, in first class condition, used only a short time, located in Kentucky. Write or wire to:

THE TRI-STATE PIPE CO.
Bellaire, Ohio.

FOR SALE — Completely equipped pipe shop doing a profitable business in an active Western Kansas town. Due to owners age he is unable to properly look after business. Equipment includes one No. 16 and one No. 12 Bignall-Keeler Machine and complete set of dyes and tools. Terms to reliable parties. Address Box H-320, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
3—80 H.P. Clark engines direct connected to 17 x 20 compressor cylinders.
1—80 H.P. Bessemer Belted engine with 56" clutch.
2—No. 25 South Western Engineering Co. gasoline distillation units.
2—50 H.P. Code boilers 125 lbs. working pressure.
PREISLER & COCHRANE
Tel. 4-5427 Philcade Bldg.
3-9501 Tulsa, Okla.

Armstrong 50-B all-steel tractor drilling machine mounted on steel wheels; Ford AA engine, 40 ft. derrick; little used. Also guy lines, tools, pipe. May rent to responsible party. John Oswell, Aztec, San Juan County, New Mexico.

Equipment Wanted

WANTED TO BUY—One (1) Motor driven Landis or Standard Engineering Pipe Machine. Must be in good condition and reasonable. Size desired is 2" to 12½", 4" to 16" or what size have you? Write American Pipe and Supply Co., 2405 Texas Ave., Shreveport, La.

NEED SPUDDER for 2,500-foot hole Bell County. Will trade leases for rig or for its use. What have you and where is it?
W. H. VERNOR, Eagle Pass, Texas

Steel Storage Tanks

We will erect latest type 55,000 bbl. all steel storage tanks at a great saving.

Over 500 tanks on hands from 500 bbls. to 80,000 bbls. Ready for delivery. 50—55,000 Bbl. tanks now being cut down, Haynesville, La. These tanks all built new 1924 and are extra heavy, weighing 20 tons more than standard tank.

Wire—Phone—Write—W. C. Berry

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64 North Second St. Kansas City, Kansas

REFINERY EQUIPMENT

2—10' x 18' x 2⅜" steel, Vogt Reaction chambers, $750 each on car, Ardmore, Okla.
Gasoline, Run Down and Pressure Tanks.
Pumps, all kinds and sizes, condenser boxes, agitators, pipe stills, everything needed for refinery requirements. Complete line of valves and fittings, Oakite treated and tested.
W. C. Berry Wire—Phone—Write H. J. Galamba

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STEEL SHEETS

$\frac{3}{16}$" to ½" thicknesses in 5' x 10' or 5' x 15' sizes, guaranteed like new, any quantity for immediate shipment, 60,000 tons on hand.

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64 North Second St., Kansas City, Kan. Mayo Hotel, Room J, Tulsa, Oklahoma P. O. Box 868, Cincinnati, Ohio

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SURFACE CASING
AT GREAT SAVING

20" — 19½" — 16" — 15½" — 12½" — 12", any other sizes made to order. Welded pipe for any purpose

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Ranches and Farm Lands

ROCKY MOUNTAIN DUDE RANCH AT A BARGAIN

The Gen. Osborne Wood Ranch only 15 minutes from Santa Fe; good buildings; 1,000 acres, well fenced; improvements alone cost over $36,000. Whole business now goes for $11,000. Terms.

The Gable Lodge, on the Pecos River; 45 minutes from Santa Fe; three large ponds stocked with trout and bass, besides a mile of river within property; 76 acres of wonderful playground; well built roomy cabin with modern comforts. Cost over $25,000. May now be had for $13,000. Reasonable terms.

Another perfectly marvelous place on Jemez River. Cost over $100,000. May now be had for small percentage this amount.

W. S. Patterson, Santa Fe, N. M.

FOR SALE
Finest 2,000 acre ranch in U. S. A. Contact owner through Box 394, Fredonia, Kansas.

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Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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Porosity-Permeability-Saturation Tests.

For Sale—Maps

Oilfield and County Ownership Maps. New price list on request. Send $1.00 for map of Texas and eastern New Mexico.
ZINGERY OIL MAP CO.
Fair Bldg. Fort Worth, Texas

Mailing Lists

OF ROYALTY investors by deed, guaranteed. Oil Industry Mailing List Co., Tulsa Loan Building, Tulsa, Oklahoma.

Financing

JAMES E. MILLER, 604 W. Seventh St., Tulsa, Okla., will aid in financial marketing problems. Fee basis.

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Box 5411, Philadelphia, Pa.

Business Opportunities

GEOLOGIST desires connection on percentage basis plus expenses. Highest credentials. Address Box G-823, The Oil and Gas Journal, 415 Lexington Avenue, New York City.

YOUR MONEY

How Do You Safeguard It?

Diversify your investments by placing some of your funds in well-bought lands. Do you know of a better way to protect your family and your estate? Land prices have not discounted the future as have stocks and bonds and desirable lands bought now will inevitably make you money. You have experts locate and drill your wells. Let specialists locate a farm or ranch for you. We have lands of all kinds — some with oil possibilities — and several that would make ideal Show Horse and Cattle Breeding Farms. Write CATES ABSTRACT CO., Decatur, Tex. and tell us what you are interested in.

SUBSTANTIALLY built apartment house for sale; income more than $225 monthly; investors, agents, write J. R. Hodges, 207 E. Laurel, San Antonio, Tex.

Manufacturers, wholesalers or jobbers general oil country supplies wanting active representation Pacific Coast, write or wire The Refinery Supply Company of California, 5199 District Blvd., Los Angeles, California.

Money Raising

WANT to borrow $60,000.00 with refinery of over $200,000.00 actual value now operating at a profit as security. Address Box H-330, The Oil and Gas Journal, Tulsa, Oklahoma.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
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CLASSIFIED RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.25*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

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Tulsa, Oklahoma

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July

31—Dallas, Tex., Interstate Oil Compact Commission meeting.

September

?—Tulsa or Oklahoma City, American Petroleum Institute, Division of Production, Mid-Continent district.

9-10—Louisville, Ky., Kentucky Petroleum Marketers Assn., Brown Hotel.

7-12—Pittsburgh, Pa., American Chemical Society, semiannual meeting.

7-12—Washington, D. C., World Power (Fuel) Conference.

16-18—Atlantic City, N. J., National Petroleum Association, thirty-fourth annual meeting, Hotel Traymore.

Week of 28—Indianapolis, Ind., National Tax Conference.

October

5-9—Atlantic City, N. J., National Safety Congress.

25-30—Atlantic City, N. J., first annual convention association of Gas Appliance and Equipment Manufacturers, annual convention American Gas Association, Atlantic City Auditorium.

?—Cleveland, Ohio, American Institute of Mining and Metallurgical Engineers.

November

9-12—Chicago, American Petroleum Institute seventeenth annual meeting.